

| <b>1. Module identification code.</b>                             |                                                                                                                        |
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| Name of the institution:                                          | Universidad Autónoma de Nuevo León                                                                                     |
| Name of the school:                                               | School of Medicine                                                                                                     |
| Name of the degree program:                                       | Medicine                                                                                                               |
| Name of the course (learning unit):                               | Clinical pathology                                                                                                     |
| Total number of class hours-theory and practice:                  | 80                                                                                                                     |
| Class hours per week:                                             | 4 hours                                                                                                                |
| Independent study:                                                | 10                                                                                                                     |
| Course modality:                                                  | Face-to-face instruction                                                                                               |
| Module level:                                                     | Sixth semester                                                                                                         |
| Core/elective module:                                             | Core                                                                                                                   |
| Curriculum area:                                                  | ACFP-F                                                                                                                 |
| UANL credit points:                                               | 3                                                                                                                      |
| Create date:                                                      | Julio 23 <sup>th</sup> , 2021                                                                                          |
| Date of last amendment made:                                      | January 10 <sup>th</sup> , 2024                                                                                        |
| Person(s) responsible for the design and amendment of the module: | Dr. E. Jorge Martín Llaca Díaz, Dra. E. Diana Robles Espino, Dr. Sergio Ayala de la Cruz, Dr. Erik Alejandro Díaz Chuc |

## 2. Purpose

The purpose of this learning unit is to help the student develop his clinical and diagnostic skills, supported by the proper use and interpretation of laboratory tests, knowledge of innovative techniques and mastery of diagnostic strategies and therapeutic follow-up that correspond to the clinical pathology laboratory.

The learning unit contributes to the formation of the graduate profile by developing the necessary skills for the timely diagnosis and follow-up of the main health problems, promoting moral and ethical attitudes, as well as providing a multidisciplinary approach with tools for their continuing medical training.

The student will make pertinent decisions in the selection of laboratory tests and the interpretation of the results. Emphasize the importance of the value of working as a team.

It is an integrated discipline that links knowledge from basic units such as biochemistry, physiology, and microbiology by relating knowledge about the different microorganisms that cause disease with the diagnostic methodology, integrating the clinical history with the alterations in laboratory studies, providing socially valid values and principles.

This learning unit applies strategies that promote self-learning, encourages the correct use of language to express ideas and solve problems. It promotes the use of methods and techniques, both traditional and cutting-edge in the laboratory for the practice of the profession. It provides a scientific basis for decision-making in medicine, considering economic factors and the rational use of resources in the clinical laboratory, and encourages deductive reasoning, the interpretation of findings and the evaluation of the natural history of the disease through the analysis of biomedical information.

### **3. Competences of the graduate profile**

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

##### *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.
2. To use logical, formal, mathematical, iconic, verbal and non-verbal languages according to their stage of life, to understand, interpret and express ideas, feelings, theories and currents of thought with an ecumenical approach.
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.
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.
5. To use logical, critical, creative and proactive thinking to analyze natural and social phenomena that allow them to make relevant decisions in their sphere of influence with social responsibility.
6. To use a second language, preferably English, clearly and correctly to communicate in everyday, academic, professional and scientific contexts.
8. To use traditional and cutting-edge research methods and techniques for the development of their academic work, the exercise of their profession and the generation of knowledge.

##### *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.

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.
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.
15. To achieve the adaptability required by the uncertain social and professional environments of our time to create better living conditions.

**Specific competences of the graduate profile to which this module (learning unit) contributes:**

**Scientific Basis of Medicine**

Uses the scientific foundations of medicine considering the economic, psychological, social, cultural and environmental factors that contribute to the onset and evolution of the disease for decision making and medical actions.

**Professional Clinical Practice**

Solves clinical problems through inductive reasoning, interpretation of studies and the definition of their nature in order to make decisions and determine principles of action of medical practice for responsible follow-up.  
Appropriately manages people with common diseases through the application of knowledge, technical procedures and basic diagnoses, based on clinical guidelines and care protocols to solve health problems.

**Critical Thinking and Research**

Applies the scientific method in the resolution of medical problems with an innovative, analytical attitude in the prevention, diagnosis and treatment of diseases.

**Professional Values and Ethics**

Cares with ethics and professionalism to sick people without distinction of race, political preferences, sexual, religious beliefs, different abilities or socioeconomic level.

Assume an ethical and responsible attitude in their medical practice, jealously preserving their patient's information as part of professional secrecy and respect for their human rights.

**Organizational Work**

Recognizes the importance of multidisciplinary work, respect for institutional policies and observance of its regulations, in order to contribute to a culture of efficient and effective organizational work.

**Communication**

Applies the principles of effective communication by establishing a relationship of respect and empathy with the people served, their families, the community and other health professionals.

Assume an ethical and responsible attitude in their medical practice, preserving their patients' information as a fundamental part of professional secrecy and respect for their human rights.

**Organizational Work**

Recognizes the importance of multidisciplinary work, respect for institutional policies and observance of regulations, in order to contribute to a culture of organizational work.

**Communication**

Applies the principles of communication through a relationship of respect and empathy with the person served, their families, the community and other health professionals. Use information appropriately.

**4. Summative evaluation:**

- Theoretical report
- Laboratory report
- Exam
- Final integrative evaluation (CIP)

**5 Final integrative evaluation (CIP)**

Integration of clinical and laboratory training in the context of complex pathologies.

## 6. Bibliography

### Textbooks:

- Mc. Pherson. ed (2017). Henry's Clinical Diagnosis and Management by Laboratory Methods. USA. Ed Elsevier. 23 ed.
- Casillas Vega, N., Mendoza Olazarán, S., & Flores Aréchiga, A. (2020). Procedimientos de Microbiología Médica Diagnóstica (1a ed.). México: McGraw Hill.
- Bishop. (2010) Clinical Chemistry. Principles, procedures, correlations. EUA: Ed. Lipincott Williams and Wilkins 7 ed.
- Patrick R. Murray. Microbiología Médica. Elsevier España: Barcelona. 8a. Edición. 2017
- Harrison's Medicina Interna McGraw Hill Cecil Goldman
- G.J. Ruiz Arguelles. Fundamentos de Hematología. Editorial Panamericana. 6a ed. 2021
- Cohn C. S. Technical Manual by AABB (American Association of Blood Banks). 20 ed. 2020

### In addition, frequent review of the following periodical publications is suggested:

- The New England Journal of Medicine (NEJM). **Recuperado de:** <https://www.nejm.org>
- American Journal of Clinical Pathology: (AJCP). **Recuperado de:** <https://academic.oup.com/ajcp>
- Journal of the American Medical Association (JAMA). **Recuperado de:** <https://jamanetwork.com/>
- Transfusion AABB (Association for the advancement of Blood & Biotherapies).  
**Recuperado de:** <https://onlinelibrary.wiley.com/journal/15372995>
- The Lancet. **Recuperado de:** [www.thelancet.com](http://www.thelancet.com)
- Revista de Investigación Clínica. **Recuperado de:** <https://clinicalandtranslationalinvestigation.com>
- Medicina Universitaria, Facultad de Medicina UANL. **Recuperado de:** <http://medicinauniversitaria.org/>



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- Annals of Internal Medicine (Ann Intern Med). American College of Physicians. **Recuperado de:** <https://www.acpjournals.org/journal/aim>
- Portal Medscape. **Recuperado de:** [www.medscape.com](http://www.medscape.com).
- Cochrane. **Recuperado de:** [www.cochrane.org/es](http://www.cochrane.org/es)
- Up to date. **Recuperado de:** [www.uptodate.com](http://www.uptodate.com)
- American Society for Microbiology. **Recuperado de:** [www.asm.org](http://www.asm.org)
- Organización panamericana de la salud. **Recuperado de:** [www.paho.org](http://www.paho.org)
- US Centers for Diseases Control and Prevention (CDC). **Recuperado de:** [www.cdc.gov](http://www.cdc.gov)



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