

## SYNTHETIC PROGRAM

| 1. Module identification code.                                    |                                                            |
|-------------------------------------------------------------------|------------------------------------------------------------|
| Name of the institution:                                          | Universidad Autónoma de Nuevo León                         |
| Name of the school:                                               | School of Medicine                                         |
| Name of the degree program:                                       | Clinical Chemistry                                         |
| Name of the course (learning unit):                               | Clinical pathology                                         |
| Total number of class hours-theory and practice:                  | 360                                                        |
| Class hours per week:                                             | 18 hours                                                   |
| Independent study:                                                | 60                                                         |
| Course modality:                                                  | Face-to-face instruction                                   |
| Module level:                                                     | Seventh semester                                           |
| Core/elective module:                                             | Core                                                       |
| Curriculum area:                                                  | ACFP-I                                                     |
| UANL credit points:                                               | 14                                                         |
| Create date:                                                      | October 15 <sup>th</sup> , 2018                            |
| Date of last amendment made:                                      | June 28 <sup>th</sup> , 2024                               |
| Person(s) responsible for the design and amendment of the module: | Dr. E. Jorge M. Llaca Díaz, Dra. E. Diana G. RoblesEspino. |

## 2. Purpose:

Contribute to achieving the profile of the graduate in the domain corresponding to the profession of Clinical Pathology, by developing the necessary competencies to carry out the processes of the clinical laboratory through the validation, design, selection and/or execution of different methods of analysis, properly interpreting the results of patient samples, under strict quality control that allows them to make timely and pertinent decisions; to collaborate in the prevention, diagnosis, control and treatment of diseases.

In relation to general competencies, the student will be able to handle the information technologies used in laboratory automation. Manifests human, academic and professional commitment to contribute to the well-being of the patient and respect for the environment. Act with empathy in conflicts during teamwork.

At Clinical Pathology, students acquire specific skills that allow them to obtain, handle, store and analyze samples for clinical diagnosis. Likewise, it drives responsibly according to national and international regulations. international standards, chemical and biological materials, to protect health and the environment. Interpret the results of analyses that allow them to make timely decisions in the diagnosis of diseases.

Clinical Pathology integrates the competencies acquired in Hematology where it studies the elements that form blood and their precursors, as well as the structural and biochemical disorders of these elements, which can lead to disease. Clinical Biochemistry applies chemical and biochemical laboratory methods to the diagnosis, treatment control, prevention, and investigation of disease. In Immunology, he identifies elements that participate in the immune response for the prevention, diagnosis and treatment of the disease. Of diagnostic medical microbiology, it analyzes, selects and executes methods of identification and sensitivity tests, for the prevention, diagnosis and treatment of infectious diseases.

It provides fundamental bases in the development of Social Service, Professional Practices and for the General Exit Exam of the bachelor's degree in clinical chemistry.

### 3. Competences of the graduate profile

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

##### *Instrumental skills:*

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.

##### *Personal and social interaction skills:*

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.

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

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. Factor to consider for evaluating the learning unit**

- Portfolio of case resolution reports
- Pre-reading questionnaire
- Tests of content of de phases
- Clinical laboatory pratice report
- Training for induction to clinical practice
- Execution of the internship under supervision
- Course integrative product

#### **5. Course integrative project/product:**

Written evaluation for the solution of cases in hematology, blood banking, clinical biochemistry and endocrinology.

## 6. References:

Delves, P., Martin, S., Burton, D. y Roitt, I. (2014) *Inmunología Fundamentos*. Argentina: Editorial Panamericana.

Forbes, B. A., Sahm, A. y Weissfeld A. (2009). *Bailey & Scott's Diagnóstico Microbiológico*. Argentina: Editorial Panamericana.

Henry, J.B. (2007). *El Laboratorio en el Diagnóstico Clínico*. España: Editorial Marbán.

Mazziotta, D. y Fernández, C. (2005). *Gestión de la Calidad en el Laboratorio Clínico*. Argentina: Editorial Panamericana.

Parslow, T., Stites D. y Terr A. (2003). *Inmunología básica y clínica*. México: Editorial Manual Moderno.

Winn, W., Allen, S., Janda, W., Koneman, E., Procop, G., Schrenckengerger, P. y Woods, G. (2008). *Diagnóstico Microbiológico*. Argentina: Editorial Panamericana.

### WEB RESOURCES FOR FREE USE:

Centro Nacional de Evaluación para la Educación Superior, A.C. (2016). Guía para el sustentante Examen General para el Egreso de la Licenciatura en Química Clínica (EGEL-QUICLI). Recuperado 23 julio de 2020.

<https://www.ceneval.edu.mx/documents/20182/35022/GuiaEGEL-QUICLI.pdf/eddc174f-b55d-4c2e-9c49-3a6349e22b1f>

Manual de Bioseguridad en el Laboratorio, Tercera Edición, OMS. Recuperado el 01 de agosto de 2020, de

[https://www.who.int/topics/medical\\_waste/manual\\_bioseguirad\\_laboratorio.pdf?ua=1](https://www.who.int/topics/medical_waste/manual_bioseguirad_laboratorio.pdf?ua=1)

Secretaría de Economía. (2015). NMX-CC-9001-IMNC-2015, *Sistemas de gestión de la calidad-requisitos*. Diario Oficial de la Federación. Recuperado 23 de enero de 2017, de

[http://www.dof.gob.mx/nota\\_detalle.php?codigo=5435775&fecha=03/05/2016](http://www.dof.gob.mx/nota_detalle.php?codigo=5435775&fecha=03/05/2016)

Secretaría de Economía. (2015). NMX-EC-15189-IMNC-2015, *Laboratorios clínicos-requisitos de la calidad y competencia*. Diario Oficial de la Federación. Recuperado 23 de enero de 2017, de

[http://www.dof.gob.mx/nota\\_detalle.php?codigo=5393609&fecha=26/05/2015](http://www.dof.gob.mx/nota_detalle.php?codigo=5393609&fecha=26/05/2015)

Spanish Society of Microbiology

[https:// www.semicrobiologia.org/](https://www.semicrobiologia.org/)

Spanish Society of Laboratory Medicine

<http://www.segc.es/>

Spanish Society of Hematology and Hemotherapy

<https://sehh.es/>

Spanish Society of Immunology

[https:// www.inmunologia.org/](https://www.inmunologia.org/)