

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):	Cytogenetic diagnostic tools
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:	Eighth semester
Core/elective module:	Elective/Optional
Curriculum area:	Fundamental vocational training curricular area ACFB
UANL credit points:	3
Create date:	April 1 st , 2019
Date of last amendment made:	December 14 th , 2022
Person(s) responsible for the design and amendment of the module:	MC. Susana Gabriela Cárdenas Ramos Dr.C. Geovana Calvo Anguiano

2. Purpose:

The Cytogenetic Diagnostic Tools program seeks to contribute to achieving the profile of the graduate in the field of specialized clinical analysis so that the student carries out traditional and cutting-edge biological procedures that contribute to the cytogenetic diagnosis, promotes that the student always works with truth, honesty, and ethical behavior when making observations that support a diagnosis, in addition to all this achieving the adaptability that professional environments require in both the pre-analytical and analytical areas of a laboratory. There is a relationship with learning units from previous semesters such as Cell Biology, where knowledge about cellular structure and function is applied, Pathology, which analyzes the origin and genetic factors of diseases, and Genetics, which provides the chromosomal aspects of inheritance. The knowledge that favors the development of the skills necessary for the student to execute chemical and biological procedures in obtaining, handling, storing, and analyzing samples to contribute to a cytogenetic diagnosis, guaranteeing the regulatory use and disposal of chemical and biological materials used in the process for performing the karyotype.

3. Competences of the graduate profile

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

Instrumental skills:

8. To use traditional and cutting-edge research methods and techniques to develop their academic work, exercise their profession, and generate knowledge.

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:

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:

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.

4. Summative evaluation:

- Daily evidences
- Partial exams
- PIA

5. Course integrative project/product:

Theoretical evaluation of clinical cases in which the student will demonstrate the ability to select the appropriate technique and be able to interpret results of cytogenetic tests

6. References:

1. Turnpenny P y Elard S. (2009). Elementos de Genética Médica de Emery. 13ª edición. México. Editorial Elsevier
2. Gersen S.L. Keagle M.B. (2005). The principles of Clinical Cytogenetics. Second edition. Estados Unidos. Humana Press Edition.
3. Arsham MS, Barch MJ, Lawce HJ. (2017) The AGT Cytogenetic Laboratory Manual. Fourth edition. Wiley Blackwell.
4. Nussbaum RR., Huntington M, Willard F, Nussbaum RL, (2008). Genética en Medicina de Thompson & Thompson; México. Editorial Elsevier Masson
5. Paniagua R. (2003). Biología celular 2ª Edición. Méxic. Editorial Mc Graw Hill
6. Scriver CR. y AL. Beaudet (2008) The Metabolic and Molecular Bases of Inherited Disease, México. Editorial McGraw-Hill
7. Solari AJ. (2004). Genética Humana. Fundamentos y aplicaciones. 3ª edición. México, Editorial Médica Panamericana.
8. 8. Página web: Atlas of Genetics and Cytogenetics in Oncology and Haematology. <http://atlasgeneticsoncology.org/>