

## CURRICULAR OVERVIEW

Bachelor Degree in Clinical Chemistry			
Curricular Area	Credits		Totals in the Area
	Mandatory	Optional	
General Studies	8	6	14
Basic Education	81	0	81
Fundamental Professional Education	46	12	58
Integrative Professional Education	39	32	71
Totales	174	50	224

Distribution of Credits by Curricular Area	
<b>Curricular Area General Studies</b>	
<b>Mandatory</b>	<b>C</b>
Leadership, Entrepreneurship, and Innovation	2
Social Responsibility and Sustainable Development	2
Ethics and Culture of Legality	2
Peace Culture	2
<b>Optional</b>	<b>C</b>
Optative I Curricular Area General Studies	2
Optative II Curricular Area General Studies	2
Optative III Curricular Area General Studies	2
<b>Total in the area</b>	<b>14</b>
<b>Curricular Area of Basic Education</b>	
<b>Mandatory</b>	<b>C</b>
Mathematics	5
General Chemistry	7

Cell Biology	5
Information Technologies	2
Physics	4
Physicochemistry	7
Morphological Sciences	6
Basic Microbiology	3
Biostatistics	2
Fundamentals of Analytical Chemistry	6
Basic Organic Chemistry	6
Medical Physiology	4
Organic Techniques	3
Biochemistry	6
Pathology	2
Instrumental Analysis	5
Molecular Biology	5
Organic Analysis	3
<b>Total in the area</b>	<b>81</b>
<b>Curricular Area of Fundamental Professional Education</b>	
<b>Mandatory</b>	<b>C</b>
Medical Parasitology	3
Applied Analytical Chemistry	7
Hematology	3
Genetics	2
Básica Immunology	3
Clinical Biochemistry	5
Blood Bank and Transfusion Medicine	4
Medical Bacteriology	5
Mycology and Virology	4
Food Analysis	5
Toxicology and Legal Chemistry	3
Administration and Quality in the Clinical Laboratory	2
<b>Optional</b>	<b>C</b>
Optative I Curricular Area of Fundamental Professional Education	3

Optative II Curricular Area of Fundamental Professional Education	3
Optative III Curricular Area of Fundamental Professional education	3
Optative IV Curricular Area of Fundamental Professional education	3
<b>Total in the area</b>	<b>58</b>
<b>Curricular Area of Integrative Professional Education</b>	
<b>Mandatory</b>	<b>C</b>
Clinical Pathology	14
Diagnostic Medical Microbiology	4
Social Service	16
Course for General Final Examination	3
Research Seminar I	2
<b>Optional</b>	<b>C</b>
Optative I Curricular Area of Integrative Professional Education	10
Optative II Curricular Area of Integrative Professional Education	22
<b>Total in the Area</b>	<b>71</b>
<b>Total curriculum</b>	<b>224</b>

<b>Catalog of Optional Learning Units</b>	
<b>Optatives I, II and III for the Curricular Area of General Studies</b>	<b>C</b>
English Pre-intermediate	2
English Intermediate	2
English Upper-intermediate	2
Psychology and Professional development	2
<b>Optatives I, II, III and IV for the Curricular Area of Fundamental Professional Education</b>	<b>C</b>
Public Health	3
Molecular Pathology	3
Comprehensive Laboratory for Organic Analysis	3
Applied Instrumental Analysis	3
Diagnostic Medical Hepatology	3
Molecular Diagnosis and Biotechnology	3
Design and Analysis of Experiments	3

Selected Microbiology Topics	3
Cytogenetic Diagnostic Tools	3
Molecular Epidemiology of Sentinel Pathogens	3
Strategic Project Management	3
Andrological Analysis	3
Forensic Analysis	3
<b>Optatives I and II for the Curricular Area of Integrative Professional Education*</b>	<b>C</b>
Selected clinical laboratory topics	10
Research Seminar II	10
Professional Practices	20
Research Clerkship	20

To keep up-to-date the curriculum in emerging areas of the profession, the Academic Commission for this graduate program may propose new optional learning units, after being approved by the competent academic bodies of the UANL.

To cover optional credits of the integrative professional curriculum area,

- Learning units that allow the relationship between the academia and the professional practice
- Academic clerkship
- Research clerkship
- Other courses or certifications

Which must be previously approved by the Academic Commission for this undergraduate program.

In case of choosing options with a different value in credits, you must take the necessary ones to complete at least 32 credits.

To cover this curricular area, the student may exceed the number of credits, which will be recorded in the corresponding academic documents