COLLEGE OF PROFESSIONAL STUDIES

BACHELOR OF SCIENCE IN CLINICAL LABORATORY SCIENCE

Improve Human Health with Scientific Research

This program is designed to increase your knowledge of the human body in health and disease with courses that include biochemistry, virology, immunology, physiology, chemistry, microbiology, hematology, quantitative analysis, and molecular diagnostics. With a degree in clinical laboratory sciences, you will be prepared to seek careers in clinical diagnostics, clinical research, and the medical device industry, or you could pursue an advanced degree in health care related fields of study.

Program Highlights:

- Assess clinical laboratory practice and procedure by applying both technical skills and theory
- Identify problems in the clinical laboratory and develop a plan to mitigate them
- Explore the range of laboratory methods that include advanced analytics, immunology, microbiology, hematology, and molecular science
- Conduct research both to develop new treatments and to try to prevent health problems
- Produce written work following industry standards to document your findings

Online and On-campus Programs
Monthly Starts and Accelerated Classes
WSCUC Accredited
MAJOR IN CLINICAL LABORATORY SCIENCE

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The Bachelor of Science in Clinical Laboratory Sciences provides students with diverse laboratory skills and prepares them for employment in a clinical or research setting. The program is designed to increase knowledge of the human body in health and disease with courses that include biochemistry, virology, immunology, physiology, chemistry, microbiology, hematology, quantitative analysis, and molecular diagnostics. Graduates with a degree in clinical laboratory sciences may choose to find employment in areas such as clinical diagnostics, clinical research, medical device industry, or pursue advanced degrees in healthcare-related fields of study.

This degree is also designed for students interested in becoming a licensed clinical laboratory scientist in the state of California. Students with this interest should review the requirements to obtain a trainee license from the Laboratory Field Services Branch of the California Department of Health at the website below: https://www.cdph.ca.gov/Programs/OSPHLD/LFS/Pages/CLS-Trainee.aspx. Students outside of California should check with their respective State Department of Health for detailed information regarding licensing requirements for their specific career.

Additional Program Information

The requirements for a California trainee license are specific. Students who wish to transfer science units from other schools should check with the California Department of Health to confirm that those classes satisfy the academic requirements for the trainee license.

Once the student has graduated and obtained their trainee license it is incumbent on the student to find a suitable training site. National University does not help in this process after graduation.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Assess clinical laboratory practice and procedure by applying the knowledge of technical skills and theory obtained.
- Identify problems in the clinical laboratory and establish a course of action to correct them.
- Distinguish among laboratory methods which use advanced analytical, immunological, microbiological, hematomatical, and molecular techniques.
- Evaluate laboratory procedure theory, methodology and results.
- Utilize critical thinking skills in clinical laboratory situations.
- Conduct research using primary literature sources.
- Produce written work of the standards required by employers in the industry or post-graduate programs.

Degree Requirements

To receive the Bachelor of Science degree with a Major in Clinical Laboratory Science, students must complete at least 180 quarter units as articulated below, 45 of which must be completed in residence at National University. Upper-division level must consist of 76.5 quarter units and General Education must be a minimum of 70.5 quarter units. Refer to the section on undergraduate admission procedures for specific information regarding admission and evaluation. All students receiving an undergraduate degree in Nevada are required by state law to complete a course in Nevada Constitution.

Preparation for the Major

(11 courses; 49.5 quarter units)

BIO 161* General Biology I
BIO 201* Human Anatomy & Physiol I
  Recommended: Prior completion of: BIO 100, BIO 100A, CHE 101 and CHE 101A or equivalent courses.
BIO 201A* Human Anatomy & Physiol Lab I (1.5 quarter units)
  Prerequisite: BIO 201
BIO 203* Introductory Microbiology
  Recommended: Prior completion of: BIO 201 and BIO 201A, BIO 202 and BIO 202A, BIO 100 and BIO 100A, CHE 101 and CHE 101A or equivalent courses
BIO 203A* Introductory Microbiology Lab (1.5 quarter units)
  Prerequisite: BIO 203
CHE 150 Introductory Organic Chemistry
  Prerequisite: CHE 101 and CHE 101A, or CHE 141, CHE 142, CHE 143 and CHE 149A
CHE 150A Introductory Organic Chem Lab (1.5 quarter units)
  Prerequisite: CHE 150
CHE 141* General Chemistry 1
  Prerequisite: MTH 215 or equivalent and CHE 101
CHE 142* General Chemistry 2
  Prerequisite: CHE 141
CHE 350 Organic Chemistry I
  Prerequisite: CHE 142
PHS 104* Introductory Physics
  Prerequisite: 2 years of high school algebra, and MTH 204 or MTH 215 or MTH 216A and MTH 216B

* May be used to meet a General Education requirement.

Core Requirements

(11 courses; 49.5 quarter units)

BST 322 Intro to Biomedical Statistics
HSC 300 Legal/Ethical Issues & Hlth. Pr.
CLS 320 Clinical Lab Management
CLS 301 Clinical Biochemistry
  Recommended: Prior completion of: CHE 142
CLS 401 Quantitative Analysis
  Recommended: Prior completion of: CHE 142
CLS 305 Clinical Immunology
  Recommended: Prior completion of: CHE 101, BIO 161 and BIO 203 or equivalent
CLS 315 Molecular Diagnostics
  Recommended: Prior completion of: BIO 162 and CHE 142
CLS 310 Clinical Virology
  Recommended: Prior completion of: CHE 101, BIO 161 and BIO 203 or equivalent
CLS 405 Clinical Microbiology
  Recommended Preparation: CLS 301 with a minimum grade of B, CLS 305 with a minimum grade of B and CLS 315 with a minimum grade of B
CLS 410 Clinical Hematology
  Recommended Preparation: CLS 301 with a minimum grade of B, CLS 315 with a minimum grade of B and CLS 305 with a minimum grade of B
CLS 495 Clinical Lab Science Capstone
  Prerequisite: Must have completed all required core classes.

Upper-Division Electives

(6 courses; 27 quarter units)

Students must complete a minimum of 27 quarter units of Upper-Division Electives to fulfill the upper-division unit requirements for the B.S. with a Major in Clinical Laboratory Science.

The following courses are strongly recommended:

COM 354 Professional Presentations
  Prerequisite: ENG 101
HSC 410 Informatics for Health Profs.
HSC 400 Mgmt. for Health Professionals
HSC 310 Issues & Trends in Healthcare
HSC 420 Healthcare Research

For complete program information, see the National University Catalog 83, effective July 2020.