ALBANY COLLEGE OF PHARMACY
AND HEALTH SCIENCES

# BACHELOR OF SCIENCE IN CLINICAL LABORATORY SCIENCES

The Clinical Laboratory Sciences program prepares students to perform a full range of laboratory analyses that are essential for the diagnosis, monitoring and treatment of disease. These laboratory analyses are applicable to the fields of human and veterinary medicine, forensics, drug development and research. Graduates are eligible for national certification through the American Society of Clinical Pathology as well as licensure in the state of New York as Clinical Laboratory Technologists.

The curriculum in Biomedical Technology is designed to assure that all students are able to:

- Perform Clinical Laboratory Testing
  - Evaluate appropriateness and quality of laboratory specimens and handle them safely
  - Accurately and efficiently perform analytic analyses in all areas of the clinical laboratory
  - Evaluate test results to assure accuracy of analyses and correlate with medical history and diagnosis
- Participate in the Daily Management of the Clinical Laboratory
  - Apply and properly follow all safety requirements within the laboratory and health care facility
  - Evaluate new testing methods and instrumentation for accuracy, precision, specificity, sensitivity and appropriateness to patient care
  - Explain the principles of human resources management
- Promote Public Health
  - Promote public awareness of health and disease
  - Recognize the role of the laboratory in disaster management
- Provide Laboratory Information and Education
  - Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals and the public
  - Establish and maintain continuing education for self and others to maintain lifelong learning and professional competence
  - Provide leadership in educating other health care professionals on issues related to the clinical laboratory
  - Read and evaluate published professional literature for its pertinence and reliability and explain the basic principles of the scientific method
- Understand Health Care System and the Role of the Medical Laboratory
  - Explain the role of the regulatory agencies that oversee the clinical laboratory and of the regulations pertinent to the laboratory and the healthcare organization in which the laboratory resides
  - Explain the organizational structure of healthcare organizations and the role of the clinical laboratory in the provision of patient care

# BS CLINICAL LABORATORY SCIENCES REQUIRED COURSES

**Communications: 6 required credits**[1]
COM 115: Principles of Communication (3)
BHS 230: Sophomore Seminar (3)

[1]All incoming students are assessed for their writing ability. The assessment is designed to direct students to the courses for which they are best prepared in the first year of the curriculum.

**Humanities, Culture and Health: 18 required credits**
HUM 101, 102 and 201: The Pre-Modern World, The Modern World, The Contemporary World (3, 3, 3)
ETH 310: Bioethics (3)
PSY 101: General Psychology (3)
Social Science Elective (3)

**Basic Sciences: 39 required credits**
BIO 101 and 102: General Biology I and II (4, 4)
BIO 213 and BIO 214: Anatomy and Physiology I and II (3, 3)
BIO 215 and BIO 216: Anatomy and Physiology I and II Lab (1, 1)
BIO 235: Cell Biology (3)
BIO 236: Cell Biology Laboratory (1)
CHE 101 and 102: General Chemistry I and II (4, 4)
CHE 245: Survey of Organic Chemistry (4)
CHE 311: Biochemistry I (3)
CHE 312: Biochemistry I Lab (1) - replaced with Clinical Biochemical Techniques starting in Fall of 2017
MAT 145: Elementary Statistics (3)

**Biomedical Sciences: 7 required credits**
BHS 201: Medical Terminology (3)
BHS 740 G: Genetics and Molecular Basis of Disease (4)

**Clinical Sciences: 50 required credits**
CLS 327 and 329: Clinical Microbiology I and II (3, 3)
CLS 328 and 330: Clinical Microbiology I and II Lab (1, 1)
CLS 317: Clinical Hematology (3)
CLS 318: Clinical Hematology Lab (1)
CLS 306: Urinalysis and Body Fluids (2)
CLS 337: Clinical Immunology (3)
CLS 338: Clinical Immunology Lab (1)
CLS 339: Immunohematology (3)
CLS 340: Immunohematology Lab (1)
CLS 346: Clinical Chemistry (3)
CLS 347: Clinical Chemistry Lab (1)
CLS 400: Laboratory Management and Education (3)
CLS 410: Clinical Correlations (3)
CLS 401 and 402: Clinical Practicum I and II (9, 9)

**Electives: 9 elective credits**
Free electives (9)

**Total Credits: 129 credits**

# BS IN CLINICAL LABORATORY SCIENCES SAMPLE SCHEDULE

| Year 1 | | | | | | |
|---|---|---|---|---|---|---|
| **Fall Semester** | | **Credits** | | **Spring Semester** | | **Credits** |
| BIO 101 | General Biology I | 4 | | BIO 102 | General Biology II | 4 |
| CHE 101 | General Chemistry I | 4 | | CHE 102 | General Chemistry II | 4 |
| HUM 101 | Pre-Modern World | 3 | | MAT 145 | Elementary Statistics | 3 |
| COM 115 | Principles of Communication | 3 | | HUM 102 | Modern World | 3 |
| PSY 101 | General Psychology | 3 | | | Elective | 3 |
| | **Total** | **17** | | | **Total** | **17** |

| Year 2 | | | | | | |
|---|---|---|---|---|---|---|
| **Fall Semester** | | **Credits** | | **Spring Semester** | | **Credits** |
| HUM 201 | Contemporary World | 3 | | BHS 230 | Sophomore Seminar | 3 |
| BIO 213 | Anatomy and Physiology I | 3 | | BIO 214 | Anatomy and Physiology II | 3 |
| BIO 215 | Anatomy and Physiology I Lab | 1 | | BIO 216 | Anatomy and Physiology II Lab | 1 |
| BHS 201 | Medical Terminology | 3 | | BIO 235 | Cell Biology | 3 |
| | Social Science Elective | 3 | | BIO 236 | Cell Biology Lab | 1 |
| | Elective | 3 | | CHE 245 | Survey of Organic Chemistry | 4 |
| | | | | | Elective | 3 |
| | **Total** | **16** | | | **Total** | **18** |

| Year 3 | | | | | | |
|---|---|---|---|---|---|---|
| **Fall Semester** | | **Credits** | | **Spring Semester** | | **Credits** |
| CLS 327 | Clinical Microbiology I | 3 | | CLS 329 | Clinical Microbiology II | 3 |
| CLS 328 | Clinical Microbiology I Lab | 1 | | CLS 330 | Clinical Microbiology II Lab | 1 |
| CHE 311 | Biochemistry I | 3 | | CLS 346 | Clinical Chemistry | 3 |
| CHE 312 | Biochemistry I Lab* | 1 | | CLS 347 | Clinical Chemistry Lab | 1 |
| CLS 317 | Clinical Hematology | 3 | | CLS 339 | Immunohematology | 3 |
| CLS 318 | Clinical Hematology Lab | 1 | | CLS 340 | Immunohematology Lab | 1 |
| CLS 306 | Urinalysis and Body Fluids | 2 | | CLS 337 | Clinical Immunology | 3 |
| ETH 310 | Bioethics | 3 | | CLS 338 | Clinical Immunology Lab | 1 |
| | **Total** | **17** | | | **Total** | **16** |

| Year 4 | | | | | | |
|---|---|---|---|---|---|---|
| **Fall Semester** | | **Credits** | | **Spring Semester** | | **Credits** |
| BHS 740 | Genetics and Molecular Basis of Disease | 4 | | CLS 410 | Clinical Correlations | 3 |
| CLS 400 | Laboratory Management and Education | 3 | | CLS 402 | Clinical Practicum II | 9 |
| CLS 401 | Clinical Practicum I | 9 | | | | |
| | **Total** | **16** | | | **Total** | **12** |
| | | | | | | |

*replaced with Clinical Biochemical Techniques starting in Fall of 2017

*Update 8/10/16*