

## **BACHELOR OF SCIENCE IN BIOMEDICAL TECHNOLOGY**

The Biomedical Technology program allows students to explore the many facets of human health and disease with an emphasis on the contribution of diagnostic laboratory medicine to medical practice. Students in the Biomedical Technology program have a variety of options based on their personal interests and career goals. The Program provides a strong foundation in basic and clinical sciences. Students are prepared to seek positions in the biomedical device industry such as research, technical support and sales or to pursue admission to MS programs in Physician Assistant Studies. Incoming freshman students may apply for early assurance acceptance to the MS in Physician Assistant Studies at Albany Medical College. (This track does not lead to certification or licensure. See the BS in Clinical Laboratory Sciences.)

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

- Interpret Clinical Laboratory Testing
  - o Evaluate appropriateness and quality of laboratory specimens and handle them safely
  - o Evaluate test results to assure accuracy of analyses and correlate with medical history and diagnosis
- Promote Public Health
  - o Promote public awareness of health and disease
- Demonstrate Professionalism
  - o Demonstrate professional conduct and interpersonal communication skills with patients, laboratory personnel, other health care professionals and the public
  - o Establish and maintain continuing education for self and others to maintain lifelong learning and professional competence
  - o Provide leadership in educating other health care professionals on issues related to the clinical laboratory
  - o Read and evaluate published professional literature for its pertinence and reliability and explain the basic principles of the scientific method
- Understand Health Care Systems and the Role of the Medical Laboratory
  - o 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
  - o Explain the organizational structure of healthcare organizations and the role of the clinical laboratory in the provision of patient care
- Practice the principles of diagnostic thought process and evidence based medicine
  - o Critically evaluate current publications on diagnostic process including laboratory results
  - o Articulate the principles of evidence based medicine in the diagnostic process

## **BS IN BIOMEDICAL TECHNOLOGY REQUIRED COURSES**

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### **Communications: 6 required credits<sup>1</sup>**

COM 115: Principles of Communication (3)

BHS 230: Sophomore Seminar (3)

<sup>1</sup>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**

#### **\*Humanities Methods and Approaches Selective**

ART 105 Introduction to Drawing (3)

HIS 141 Modern American History (3)

LIT 2XX African Literature, Film, and Music (3)

PHI 250 Religion as the Search for Meaning (3)

ETH 310: Bioethics (3)

PSY 101: General Psychology (3)

Social Science Elective (3)

#### **\*\*Science and Health Through Humanities Lenses Selective**

HUM 220 Medical Humanities (3)

LIT 220 Suicide and/as Literature: East-West (3)

PHI 280 The Philosophy and Practice of Yoga (3)

### **Basic Sciences: 42 required credits**

BIO 101 and 102: General Biology I and II (4, 4)

BIO 213 and BIO 214: Anatomy and Physiology I and Lab (3, 1)

BIO 215 and BIO 216: Anatomy and Physiology II and Lab (3, 1)

BIO 225 Genetics (3)

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)

CLS 348 Clinical Biochemical Techniques (1)

MAT 145: Elementary Statistics (3)

### **Biomedical Sciences: 10 required credits**

BHS 201: Medical Terminology (3)

BHS 345 and BHS 346: Molecular Diagnostics and Lab (3, 1)

BHS 450: Senior Seminar in Biomedical Technology (3)

**Clinical Sciences: 29 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 307: Urinalysis and Body Fluids (1)

CLS 308: Urinalysis and Body Fluids Lab (1)

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)

BHS 410 Clinical Correlations for Health Care Professionals (3)

**Electives: 21 elective credits**

Directed Electives (18)

Free electives (3)

**Total Credits: 126 credits**

## BS IN BIOMEDICAL TECHNOLOGY SAMPLE SCHEDULE

X	#	Course name	cr		X	#	Course name	cr
	BIO 101	General Biology I	4			BIO 102	General Biology II	4
	CHE 101	General Chemistry I	4			CHE 102	General Chemistry II	4
	COM115	Principles of Communication	3			MAT145	Elementary Statistics	3
	PSY101	General Psychology	3				Elective	3
	HUM115	Voice and Identity	3				Humanities Methods and Approaches Selective*	3
		Total	17				Total	17

X	#	Course name	cr		X	#	Course name	cr
	BHS201	Medical Terminology	3			BIO 235/236	Cell Biology with lab	4
	BIO 213	Anatomy & Physiology I Lecture	3			CHE245	Survey of Organic Chemistry	4
	BIO 214	Anatomy & Physiology I Lab	1			BHS230	Sophomore Seminar in Biomedical Technology	3
	BIO 225	Genetics	3			BIO 215	Anatomy & Physiology II Lecture	3
		Directed Elective-SOC	3			BIO 216	Anatomy & Physiology II Lab	1
		Science and Health Through Humanities Lenses Selective**	3					
		Total	16				Total	15

X	#	Course name	cr		X	#	Course name	cr
	CLS327/328	Clinical Microbiology I	4			CLS329/330	Clinical Microbiology II	4
	CLS317/318	Clinical Hematology	4			CLS346/347	Clinical Chemistry	4
	CLS307/308	Urinalysis and Body Fluids	2			CLS339/340	Immunohematology	4
	CHE311	Biochemistry	3			CLS337/338	Clinical Immunology	4
	CLS 348	Clinical Biochemical Techniques	1					
	ETH310	Bioethics	3					
		Total	17					16

X	#	Course name	cr		X	#	Course name	cr
	BHS345	Molecular Diagnostics	3			BHS450	Senior Seminar in Biomedical Technology	3
	BHS346	Molecular Diagnostics-Lab	1				Directed Electives	9
	BHS 410	Clinical Correlations for Health Care Professionals	3					
	BHS360	Clinical Anatomy	3					
		Directed Electives	6					
		Total	16				Total	12

Total Credit Hours = **126**

**BS in Biomedical Technology/MS Cytotechnology and Molecular Cytology:**

Upon completion of the third year of core courses, students may elect to enter the BS Biotechnology/MS Cytotechnology and Molecular Cytology program. They continue their education with training in microscopic examinations of human cell samples in order to identify inflammatory or cancerous changes in cell morphology. The Cytotechnology and Molecular Cytology program is the largest in the country and the only academic-based program in New York State. Graduates are eligible for accreditation nationally and for licensure in the state of New York State. (For course information, see the MS in Cytotechnology and Molecular Cytology program.)

**BS in Biomedical Technology/MS Clinical Laboratory Sciences:**

Students electing to pursue the combined BS in Biomedical Technology and the MS in Clinical Laboratory Sciences will complete the first two years of the Biomedical Technology program and use the third year of the curriculum to complete the requirements for admission into the MS program and to take additional coursework in upper level sciences, public health or other health related courses that support entrance into the MS program. (For course information, see the MS in Clinical Laboratory Sciences Program.)