

| SCHOOL OF NATURAL SCIENCES AND TECHNOLOGY | | | |
|---|--|----------------------------------|-----------------------------------|
| Degree: BACHELOR OF SCIENCE Credits: 153 | | CURRICULUM Since: August 2018 | |
| Program: MEDICAL TECHNOLOGY | | | |
| <p>Description: The Bachelor of Science with a Major in Medical Technology is targeted to attract students interested in studying a career that will prepare them to help in the solution of health problems. Physicians base about 70 percent of their diagnosis and treatment decisions on the results of laboratory testing. Graduates from this program will be prepared to work in the clinical laboratories in hospitals and medical centers; pharmaceutical industry in quality control and microbiology labs, research and biotechnology; government crime labs, accreditation offices, environmental technology and lab information systems; humanitarian work in the Peace Corps, Project Hope and medical missionary workers. Many medical technology degree graduates assume positions as laboratory directors and healthcare supervisors.</p> | | | |
| Course Code | Course Title | Credits | Requisites |
| General Education Courses | | | |
| ENGL 152 | Fundamentals of Reading and Writing | 3 | |
| ENGL 153 | Advanced Communicative English | 3 | ENGL 152 |
| ENGL 231 | Research and Writing | 3 | ENGL 153 |
| SPAN 152 | Fundamentals of Reading and Writing | 3 | |
| SPAN 250 | Writing Techniques | 3 | SPAN 152 |
| SPAN 255 | Research and Writing | 3 | SPAN 250 |
| GESC 105 | Freshman Seminar | 3 | |
| GESC 107 | Introduction to Computers for Science Students | 3 | |
| GESC 264 | Introduction to Scientific Research | 3 | |
| HUMA 111 | Civilizations and Universal Culture I | 3 | |
| HUMA 112 | Civilizations and Universal Culture II | 3 | |
| SOSC 111 | Individual, Community, Government and Social Responsibility I | 3 | |
| SOSC 112 | Individual, Community, Government and Social Responsibility II | 3 | |
| ¹ MATH 152 | Trigonometry and Analytical Geometry | 4 | MATH 151 or placement test |
| ¹ MATH 152L | Trigonometry and Analytical Geometry Lab | 0 | MATH 151 or placement test |
| | | 43 | |
| Professional/Core Courses | | | |
| BIOL 203 | General Biology I | 4 | Co-req. BIOL 203L |
| BIOL 203L | General Biology I Lab | 0 | Co-req. BIOL 203 |
| BIOL 204 | General Biology II | 4 | BIOL 203, 203L, Co-req. BIOL 204L |
| BIOL 204L | General Biology II Lab | 0 | BIOL 203, 203L, Co-req. BIOL 204 |
| PHSC 203 | General Physics I | 3 | MATH 221, Co-req. PHSC 203L |
| PHSC 203L | General Physics I Lab | 1 | MATH 221, Co-req. PHSC 203 |
| PHSC 204 | General Physics II | 3 | PHSC 203, 203L, Co-req PHSC 204L |
| PHSC 204L | General Physics II Lab | 1 | PHSC 203, 203L, Co-req PHS 204 |

| Course Code | Course Title | Credits | Requisites |
|--|---|-----------|---|
| CHEM 203 | General Chemistry I | 4 | MATH 152 ¹ Co-req. CHEM 203L |
| CHEM 203L | General Chemistry I Lab | 0 | MATH 152, Co-req. CHEM 203 |
| CHEM 204 | General Chemistry II | 4 | CHEM 203,203L,Co-req. CHEM204L |
| CHEM 204L | General Chemistry II Lab | 0 | CHEM 203,203L , Co-req. CHEM 204 |
| CHEM 221 | Analytical Chemistry | 3 | CHEM 204, MATH 152,Co-req. CHEM 221L |
| CHEM 221L | Analytical Chemistry Lab | 1 | CHEM 204, MATH 152, Co-req. CHEM 221 |
| CHEM 351 | Organic Chemistry I | 3 | CHEM 204, 204L, Co-req. CHEM 351L |
| CHEM 351L | Organic Chemistry I Lab | 1 | CHEM 204, 204L , Co-req. CHEM 351 |
| CHEM 352 | Organic Chemistry II | 3 | CHEM 351,351L,Co-req. CHEM 352L |
| CHEM 352L | Organic Chemistry II Lab | 1 | CHEM 351,351L , Co-req. CHEM 352 |
| MATH 221 | Calculus I | 4 | MATH 152, Co-req. MATH 221L |
| MATH 221L | Calculus I Lab I | 0 | MATH 152 , Co-req. MATH 221 |
| | | 40 | |
| Required Courses in Biology | | | |
| BIOL 313 | Human Anatomy and Physiology I | 3 | BIOL 204, BIOL 204L,Co-req. BIOL 313L |
| BIOL 313L | Human Anatomy and Physiology Lab I | 1 | BIOL 204, BIOL 204L ,Co-req. BIOL 313 |
| BIOL 314 | Human Anatomy and Physiology II | 3 | BIOL 313, BIOL 313L,Co-req. BIOL 314L |
| BIOL 314L | Human Anatomy and Physiology Lab II | 1 | BIOL 313, BIOL 313L , Co-req. 314 |
| BIOL 340 | General Genetics | 3 | BIOL 204, 204L, BIOL 315 |
| BIOL 355 or | Cellular and Molecular Biology or | 3 | BIOL 340,CHEM 351,CHEM 351L Co-req. BIOL 355L |
| BIOL 350 | Biochemistry | 3 | BIOL 204, BIOL 204L, CHEM 352, CHEM 352L |
| BIOL 355L | Cellular and Molecular Biology Lab | 1 | BIOL340,CHEM351,CHEM351L , Co-req. BIOL 355 |
| BIOL 320 | Microbiology | 3 | BIOL 204,BIOL 204L, Co-req BIOL 320L |
| BIOL 320L | Microbiology Lab | 1 | BIOL 204,BIOL 204L , Co-req. BIOL 320 |
| BIOL 322 | Immunology | 3 | BIOL 314, BIOL 314L |
| BIOL 315 | Biostatistics | 3 | MATH 152 |
| | | 25 | |
| Specialization Courses (The student must have approved 1,040 hours)^{1, 2} | | | |
| MTEC 400 | Introduction to Clinical Laboratory Administration and Bioethics | 2 | |
| MTEC 401 | Clinical Laboratory Instrumentation, Methodologies and Molecular Techniques | 2 | |
| MTEC 402 | Clinical Parasitology and Clinical Virology | 2 | |
| MTEC 404 | Clinical Mycology | 1 | |
| MTEC 406 | Clinical Hematology and Hemostasis | 4 | Co-req. MTEC 406L |
| MTEC 406L | Clinical Hematology and Hemostasis Laboratory | 0 | Co-req MTEC 406 |
| MTEC 408 | Clinical Immunology and Clinical Serology | 3 | Co-req MTEC 408L |

| Course Code | Course Title | Credits | Requisites |
|--|---|-----------|---------------------|
| MTEC 408L | Clinical Immunology and Clinical Serology Laboratory | 0 | Co-req MTEC 408 |
| MTEC 410 | Clinical Chemistry | 4 | |
| MTEC 412 | Study and Analysis of Body Fluids and Urine Analysis | 1 | |
| MTEC 414 | Clinical Bacteriology | 4 | Co-req MTEC 414L |
| MTEC 414L | Clinical Bacteriology Lab | 0 | Co-req MTEC 414 |
| MTEC 417 | Immunoematology | 3 | Co-req MTEC 417L |
| MTEC 417L | Immunoematology Lab | 0 | Co-req MTEC 417 |
| | | 26 | |
| Clinical Practice (The student must have approved 760 hours) | | | |
| MTEC 407 | Clinical Laboratory Practice - Hematology | 4 | MTEC 406, MTEC 406L |
| MTEC 405 | Clinical Laboratory Practice - Microbiology | 4 | MTEC 414, MTEC 414L |
| MTEC 415 | Clinical Laboratory Practice – Blood Bank | 3 | MTEC 417, MTEC 417L |
| MTEC 403 | Clinical Laboratory Practice - Parasitology | 1 | MTEC 402 |
| MTEC 411 | Clinical Laboratory Practice – Clinical Chemistry | 4 | MTEC 410 |
| MTEC 413 | Clinical Laboratory Practice –Body Fluids and Urine Analysis | 1 | MTEC 412 |
| MTEC 409 | Clinical Laboratory Practice-Serology | 1 | MTEC 408, MTEC 408L |
| MTEC 416 | Clinical Laboratory Practice -Study Cases Clinical Laboratory | 1 | |
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Minimum GPA of 2.50 in all concentration courses / Minimum graduation GPA of 2.50

Rev. 11/2017

Important notes:

¹ Medical Technology Professional Phase:

- After completing 109 credits (after three years of undergraduate education), students must apply for admission for the professional phase.
- The student must maintain a minimum 2.75 grade point average.
- Students must have passed with a grade of C the following courses: Biology I and II, Human Biology I and II, Microbiology, Immunology, Cellular Biology or Biochemistry, General Chemistry I and II, Analytical Chemistry, Pre-calculus, Calculus I, Physics I and II and Organic Chemistry I y II.
- Students must have a clean record.
- Students must submit the required documentation.
- Students will be responsible for dates and meetings which shall participate for admission to the professional phase.
- Oral interview and an essay to be performed during the evaluation process.
- Three letters of recommendation from science and/or math professors.
- Students will be admitted to the professional stage if they meet the pre-requirements and subject to the assessment of the Evaluation Committee of the School of Natural Science and Technology.
- Whether a student meets the requirements does not guarantee admission to the program.
- Students not admitted to the professional phase, have the option of completing a degree in Biology. They must complete the required courses in the program.

² Students of the University Center of Barceloneta, must apply for admission to the professional phase at Gurabo.

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|--|---|---------------------------|---------------------------------------|
| Degree: BACHELOR IN SCIENCE | | PLAN OF STUDY | |
| Credits: 153 | | Since: August 2018 | |
| Program: MEDICAL TECHNOLOGY | | | |
| Course Code | Course Title | Credits | Requisites |
| FIRST YEAR - FIRST SEMESTER | | | |
| BIOL 203 | General Biology I | 4 | Co-req. BIOL 203L |
| BIOL 203L | Laboratory of General Biology I | 0 | Co-req. BIOL 203 |
| GESC 105 | Freshmen Seminar | 3 | NONE |
| MATH 152 | Trigonometry With Analytic Geometry | 4 | MATH 151 or placement Test |
| MATH 152L | Laboratory of Trigonometry With Analytic Geometry | 0 | Co-req. MATH 151 or placement Test |
| SPAN 152 | Foundations of Reading And Writing | 3 | NONE |
| FIRST YEAR - SECOND SEMESTER | | | |
| BIOL 204 | General Biology II | 4 | BIOL 203,203L, Co-req. BIOL 204L |
| BIOL 204L | Laboratory of General Biology II | 0 | BIOL 203,203L, Co-req. BIOL 204 |
| SPAN 250 | Writing Techniques | 3 | SPAN 152 |
| MATH 221 | Calculus I | 4 | MATH 152 |
| MATH 221L | Laboratory of Calculus I | 0 | Co-req MATH 221 |
| GESC 107 | Introduction to Computers | 3 | NONE |
| SUMMER 1 | | | |
| CHEM 203 | General Chemistry I | 4 | MATH 152, Co-req. CHEM 203L |
| CHEM 203L | General Chemistry Lab I | 0 | MATH 152, Co-req. CHEM 203 |
| CHEM 204 | General Chemistry II | 4 | CHEM203,203L,Co-req CHEM204L |
| CHEM 204L | General Chemistry Lab II | 0 | CHEM203,203L , Co-req. CHEM 204 |
| SECOND YEAR - FIRST SEMESTER | | | |
| SPAN 255 | Research And Writing | 3 | SPAN 250 |
| CHEM 351 | Organic Chemistry I | 3 | CHEM 204, 204L, Co-req. CHEM 351L |
| CHEM 351L | Organic Chemistry I Lab | 1 | CHEM 204, 204L , Co-req. CHEM 351 |
| BIOL 313 | Human Anatomy and Physiology I | 3 | BIOL 204, BIOL 204L,Co-req. BIOL 313L |
| BIOL313L | Human Anatomy and Physiology Lab I | 1 | BIOL 204, BIOL 204L, Co-req BIOL 313 |
| ENGL 152 | Fundamentals of Reading And Writing | 3 | |
| SECOND YEAR - SECOND SEMESTER | | | |
| BIOL 315 | Biostatistics | 3 | MATH 152 |
| CHEM 352 | Organic Chemistry II | 3 | CHEM 351,CHEM 351L, Co-req. 352L |

| Course Code | Course Title | Credits | Requisites |
|--|---|---------|--|
| CHEM 352L | Laboratory of Organic Chemistry II | 1 | CHEM 351, CHEM 351L, Co-req. CHEM 352 |
| BIOL 314 | Human Anatomy and Physiology II | 3 | BIOL 313, BIOL 313L, Co-req. BIOL 314L |
| BIOL 314L | Human Anatomy and Physiology Lab II | 1 | BIOL 313, BIOL 313L, Co-req. 314 |
| ENGL 153 | Advanced Communicate English | 3 | ENGL 152 |
| SUMMER 2 | | | |
| PHSC 203 | General Physics I | 3 | MATH 221, Co-req. PHSC 203L |
| PHSC 203L | Laboratory of General Physics I | 1 | MATH 221, Co-req. PHSC 203 |
| PHSC 204 | General Physics II | 3 | PHSC 203, 203L, PHSC 204L |
| PHSC 204L | Laboratory of General Physics II | 1 | PHSC 203, 203L, Co-req. PHSC 204 |
| THIRD YEAR - FIRST SEMESTER | | | |
| BIOL 320 | Microbiology | 3 | BIOL 204, 204L, Co-req. BIOL 320L |
| BIOL 320L | Microbiology Lab | 1 | BIOL 204, 204L, Co-req. BIOL 320 |
| BIOL 322 | Immunology | 3 | BIOL 320, BIOL 320L |
| CHEM 221 | Analytical Chemistry | 3 | CHEM 204, MATH 152, Co-req. CHEM 221L |
| CHEM 221L | Laboratory of Analytical Chemistry | 1 | CHEM 204, MATH 152, Co-req. CHEM 221 |
| ENGL 231 | Research and Writing | 3 | ENGL 153 |
| THIRD YEAR - SECOND SEMESTER | | | |
| BIOL 355 OR | Cellular and Molecular Biology or | 3 | BIOL 340, CHEM 351, CHEM 351L, Co-req. BIOL 355L |
| BIOL 350 | Biochemistry | 3 | BIOL 204, 204L, CHEM 352, CHEM 352L |
| BIOL 355L | Cellular and Molecular Biology Lab | 1 | BIOL 340, CHEM 351, CHEM 351L, Co-req. BIOL 355 |
| GESC 264 | Introduction to Scientific Research | 3 | |
| BIOL 340 | General Genetics | 3 | BIOL 204, BIOL 204L, BIOL 315 |
| SUMMER 3 | | | |
| SOSC 111 | Individual, Community, Government and Social Responsibility I | 3 | |
| HUMA 111 | Civilizations and Universal Culture I | 3 | |
| SOSC 112 | Individual, Community, Government and Social Responsibility li | 3 | Co-req SOSC 111 |
| HUMA 112 | Civilizations and Universal Culture li | 3 | Co-req HUMA 111 |
| FOURTH YEAR ^{1,2} | | | |
| FIRST SEMESTER 1ST TEM | | | |
| MTEC 400 | Introduction to Clinical Laboratory Administration and Bioethics | 2 | |
| MTEC 401 | Clinical Laboratory Instrumentation, Methodologies and Molecular Techniques | 2 | |
| MTEC 402 | Clinical Parasitology and Clinical Virology | 2 | |
| FIRST SEMESTER 2ND TEM | | | |
| MTEC 404 | Clinical Mycology | 1 | |

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|--|---|---------|---------------------|
| MTEC 406 | Clinical Hematology and Hemostasis | 4 | Co-req. MTEC 406L |
| MTEC 406L | Clinical Hematology and Hemostasis Laboratory | 0 | Co-req. MTEC 406 |
| MTEC 408 | Clinical Immunology and Clinical Serology | 3 | Co-req. MTEC 408L |
| MTEC 408L | Clinical Immunology and Clinical Serology Laboratory | 0 | Co-req. MTEC 408 |
| SECOND SEMESTER 1^{RST} TEM | | | |
| MTEC 410 | Clinical Chemistry | 4 | |
| MTEC 412 | Study And Analysis of Body Fluids and Urine Analysis | 2 | |
| MTEC 414 | Clinical Bacteriology | 4 | Co-req. MTEC 414L |
| MTEC 414L | Clinical Bacteriology Lab | 0 | Co-req. MTEC 414 |
| SECOND SEMESTER 2ND TEM | | | |
| MTEC 417 | Immunoematology | 3 | Co-req. MTEC 417L |
| MTEC 417L | Immunoematology Lab | 0 | Co-req. MTEC 417 |
| MTEC 407 | Clinical Laboratory Practice-Hematology | 4 | MTEC 406, MTEC 406L |
| MTEC 415 | Clinical Laboratory Practice –Blood Bank | 3 | MTEC 417, MTEC 417L |
| SUMMER 4 | | | |
| 1^{RST} TEM | | | |
| MTEC 405 | Clinical Laboratory Practice-Microbiology | 4 | MTEC 414, MTEC 414L |
| MTEC 403 | Clinical Laboratory Practice-Parasitology | 1 | MTEC 402 |
| MTEC 411 | Clinical Laboratory Practice-Clinical Chemistry | 4 | MTEC 410 |
| 2ND TEM | | | |
| MTEC 413 | Clinical Laboratory Practice-Body Fluids and Urine Analysis | 1 | MTEC 412 |
| MTEC 409 | Clinical Laboratory Practice- Serology | 1 | MTEC 408, MTEC 408L |
| MTEC 416 | Clinical Laboratory Practice –Case Studies of Clinical Laboratory | 1 | |

Minimum GPA of 2.50 in all concentration courses / Minimum graduation GPA of 2.50

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