Medical Laboratory Science
Clinical Laboratory Science

Program Overview
MEDICAL LABORATORY SCIENTISTS (also called Medical Technologists Or Clinical Laboratory Scientists) are highly skilled professionals who use state-of-the-art instruments and biochemical, microscopic, molecular and immunological techniques to analyze blood, tissues and other medical specimens. In a medical laboratory, they use their knowledge and skills in science, biotechnology and laboratory medicine to provide essential information to physicians and other health care professionals about the presence, extent, or absence of disease, as well as effectiveness of treatment. Working in a laboratory requires excellent technical skills as well as problem solving, data analysis, computer skills and good oral and written communication. Clinical laboratory tests are extremely valuable: up to 70% of physician’s decisions regarding patient diagnosis and therapy are based on clinical laboratory test results. The practice of modern medicine would be impossible without the tests performed by medical laboratory scientists.

Program Description
The Medical Laboratory Science Program is the only University-based program in New Jersey. The curriculum consists of 45 credits of professional coursework and is 15 months (4 semesters) in duration. At least 90 credits of preprofessional basic science and general education course requirements are completed before entering the Program. The Program is primarily designed for students seeking their first baccalaureate degree. However, other options are available to individuals who already possess a baccalaureate degree or equivalent.

There are three options for students who want to enroll in the Medical Laboratory Science Program:
Option 1: Joint Bachelor of Science in Clinical Laboratory Sciences offered by UMDNJ and eleven collaborating colleges and universities for students seeking a first baccalaureate degree including Bloomfield College, Caldwell College, College of Saint Elizabeth, Fairleigh Dickinson University (Madison and Teaneck), Felician College, Georgian Court University, Monmouth University, New Jersey City University, Ramapo College, Rutgers University (Newark), and St. Peter's College.

Option 2: Bachelor of Science in Clinical Laboratory Sciences offered solely by UMDNJ for students who already have a baccalaureate degree from an accredited college or university in the United States.

Option 3: Certificate in Medical Laboratory Science for students with an international degree equivalent to a baccalaureate degree in the United States.

Classes begin annually in the summer semester. Class size varies with approximately 30 students per year with a maximum of 40. The curriculum consists of classroom and on-line lectures/seminars and on-campus student laboratory experiences at the Newark and Scotch Plains campuses. These sessions provide the foundation for subsequent supervised hands-on clinical practice in off-campus clinical laboratories of affiliated hospitals and reference laboratories. Additional experiences are provided in molecular diagnostics, data analysis and statistics, research, laboratory management and teaching theory. Program graduates are eligible for the national certifying examination in the Medical Laboratory Scientist category given by the American Society for Clinical Pathology MLS(ASCP).

Students must provide their own transportation to off-campus affiliated clinical sites. Regular attendance and participation in scheduled activities is expected.

CLINICAL LAB SCIENCE PROGRAM DESCRIPTION

The joint Bachelor of Science in Clinical Laboratory Sciences (BS in CLS) degree program consists of preprofessional and professional components, that provide students with a comprehensive educational experience.
**PreProfessional Component**
The preprofessional component is offered by collaborating New Jersey Colleges and Universities. Students matriculate at one of the 11 collaborating institutions and during six semesters complete a minimum of 90 semester hours of general education and basic science course requirements. During this time, students have an opportunity to familiarize themselves with each of the two clinical laboratory science disciplines before they declare a degree major in Cytotechnology and Medical Laboratory Science.

**Professional Component**
The Professional component is offered by UMDNJ and builds upon knowledge in basic sciences and general education acquired in the preprofessional component. Unique aspects of the professional component include hands-on experiences, up-to-date equipment and technology, real life settings and learning with practicing professionals. Coursework begins annually in May for Medical Laboratory Science and in August for Cytotechnology. Total credits, duration spent in the professional component and annual enrollment vary by major as follows:

<table>
<thead>
<tr>
<th>MAJOR</th>
<th>CREDITS</th>
<th>DURATION (Semesters)</th>
<th>ENROLLMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cytotechnology</td>
<td>43</td>
<td>12 months (F,Sp,Su)</td>
<td>10</td>
</tr>
<tr>
<td>Medical Laboratory Science</td>
<td>44</td>
<td>15 months (Su,F,Sp,Su)</td>
<td>24</td>
</tr>
</tbody>
</table>

For more information about our CLS-Jt 2nd Degree Program, please contact the Department at: (908) 889-2422 or 973 972-5578

**Description Of The Profession**
Medical Laboratory Scientists use their biomedical expertise to:

- Provide information to physicians to help diagnose cancer, diabetes, kidney disease, leukemia, drug overdoses, and many other conditions
- Identify pathogens, determine their susceptibility to various drugs, and detect their drug-resistance mutations
- Prepare stem cells, red blood cells and platelets for safe transfusion
- Use microscopy to identify abnormal cells and infectious agents in medical specimens
- Analyze DNA for mutations associated with genetic diseases
- Monitor drug therapy to ensure patient safety

Medical Laboratory Scientists have career opportunities in hospitals, physician offices, veterinary, and national and regional testing laboratories; biotechnology, pharmaceutical, chemical and cosmetic industries; local, state or federal health agencies; research and teaching institutions; advanced degrees in medicine and dentistry; and masters and doctoral degrees in biomedical sciences.
**Full-time and Part-time Status**
Students may attend classes on a full time or part time basis. Part time students must complete the Program within 8 semesters from the initial enrollment, including summer semesters.

**Department Faculty**
Please see the department faculty under Clinical Lab Sciences Department/view all campus.
http://profiles.umdnj.edu/forms/Search.cfm

**Primary Campus Location**
Courses are offered on both the Newark and Scotch Plains campuses. Clinical rotations are offered off campus at affiliated hospitals.

**Curriculum**
See database for program requirements and course descriptions and select your program at:
http://coursecatalog.umdnj.edu/

**Mission/Goals/Objectives**

**Mission**
The mission of the Medical Laboratory Science Program is to educate students who will function competently, creatively, responsibly, and collaboratively in a dynamic health care environment.

**Program Goals**
The educational goals of the Medical Laboratory Science Program are 1) to prepare competent Medical Laboratory Scientists to function in the clinical laboratory science field at the baccalaureate level; 2) to provide the student with a broad-base background to serve as a foundation for future growth and development; and 3) to prepare graduates to adapt to a changing health care environment. The curriculum is designed to prepare graduates for entry-level practice in scientific/technical areas, supervision/management, education and research. It is also designed to socialize the student to the attitudes and values of the profession, to provide an overview of the legal, ethical, economic, political and social aspects of the profession and the health care delivery system in general, and to instill a commitment to lifelong learning. Finally, the curriculum is designed to develop generic skills in effective communication, problem solving and self-directed learning.

**Accreditation Status**
National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
8410 West Bryn Mawr Avenue, Suite 670
Date of accreditation: Reaccredited in April 2007 for a period of seven years.

Major Clinical Affiliates

- Bayshore Hospital, Holmdel, NJ
- Engelwood Hospital and Medical Center, Englewood
- Hackensack University Medical Center, Hackensack
- Liberty Health Systems, Jersey City
- Newark Beth Israel Medical Center, Newark, NJ
- Robert Wood Johnson University Hospital, New Brunswick, NJ
- Saint Michael’s Medical Center, Newark, NJ
- Somerset Medical Center, Somerville, NJ
- St. Barnabas Medical Center, Livingston, NJ
- Trinitas Hospital, Elizabeth, NJ
- UMDNJ - University Hospital, Newark, NJ
- VA New Jersey Health Care System, East Orange and Lyons, NJ

Admissions Requirements

Option 1: Joint Bachelor of Science in Clinical Laboratory Sciences
During the pre-professional component, which is normally six semesters in duration, students have the opportunity to familiarize themselves with each discipline before they declare a major in Medical Laboratory Science. The pre-professional curriculum consists of a minimum of 90 credits including general education and required basic science courses taken at one of the eleven academic institutions collaborating with UMDNJ-SHRP. Preprofessional course requirements must be completed before the student begins the professional component at UMDNJ-SHRP.

Required Basic Science Course credits include:

- General Chemistry (8-10 credits)
- Organic Chemistry (4-5 credits)
- Biochemistry (3-4 credits) or Molecular Biology
- Cell Biology (3-4 credits)
- Anatomy and/or Human/Mammalian Physiology (4 credits)
- Statistics (3-4 credits)

In addition the following science course credits must also be completed by major:

- Immunology (3-4 credits)
- Microbiology (4 credits)
- Precalculus (3-4 credits)
Admission into Options 2 and 3 below will be considered on a space available basis with first priority given to applicants seeking their first baccalaureate degree through the Joint BS in CLS degree Program.

**Option 2: Bachelor of Science in Clinical Laboratory Sciences**
Applicants must possess a baccalaureate degree from an accredited U.S. college or university with a minimum of 76-82 credits of eligible transfer courses including basic science requirements and 30 credits of general education. For basic science course requirements by major, refer to the curriculum section for details.

**Option 3: Certificate in Medical Laboratory Science**
Applicants with an international degree will be considered for a Certificate, depending on space availability, if their degree is equivalent to a U.S. baccalaureate degree as determined by an appropriate international transcript evaluation agency. They must meet the basic science requirements listed above and achieve a minimum score of 79/80 on the Internet-Based Test of English as a Foreign Language (TOEFL) exam (or 550 on the paper-based exam).

**G.P.A. minimum requirement/credentialing requirement:**
Achievement of an overall grade point average of 2.75 (4.0=A) and grades of C or better in all required science courses.

**Additional Offerings**
A part time (16-17 credit) Discipline Specific Program in one of the major areas of Medical Laboratory Science is offered through the Center for Advanced and Continuing Education. Please refer to:
http://shrp.umdnj.edu/programs/cls/mt_disspec.htm

For More Information

**For additional information about the application process contact:**
Enrollment Services at (973) 972-5454 or via e-mail: shrpadm@umdnj.edu

**For additional information about the program contact:**
UMDNJ-School of Health Related Professions
Medical Laboratory Science Program
Deborah Josko, Ph.D. Assistant Program Director
1776 Raritan Rd.
Scotch Plains, NJ 07076

Phone: (908) 889-2422 E-mail: joskotda@umdnj.edu
Additional programmatic information is available at:
http://shrp.umdnj.edu/programs/cls/medic.htm