

Laboratory Science Technology

www.rit.edu/NTID/LST

www.rit.edu/ntid/coops/jobs

Program Overview for Employers

The **Laboratory Science Technology (LST) program** for deaf and hard-of-hearing students at Rochester Institute of Technology (RIT) prepares students for careers in analytical testing laboratories. The program was developed primarily from an *industry perspective* that focuses on testing procedures, scientific theory, laboratory calculations and workplace skills. Flagships of the program are the use of analytical equipment and a state-of-the-art instrumentation laboratory. **Graduates are prepared for work in a broad range of fields, including chemical, biological, biotechnical, pharmaceutical, environmental, forensic, industrial and food analysis. They may seek occupations as technicians in laboratories that perform analytical characterizations, research and development, quality control testing and manufacturing support.**

Degrees Awarded

- Associate in Occupational Studies (AOS)
- Associate in Applied Science (AAS)
- Associate+Bachelor's Degree Program, Applied Arts and Science (BS) with a focus on lab science technology and biotechnology

Cooperative Education (Co-op) Component Required

Students are required to complete one 10-week co-op block.

Equipment and Facilities

Students acquire a foundation in performing laboratory testing procedures in lab settings that provide opportunities for developing hands-on skills using a wide variety of instruments and techniques. They receive specific experience using analytical equipment, probes, chromatography instruments, spectrophotometers, microscopes and biotechnology equipment.

- **Instrumentation Lab:** Students learn to use:
 - Analyte-specific meters/probes
 - Analytical balances
 - Atomic spectrophotometer (Atomic Absorption/Emission)
 - Automatic titrator
 - Capillary electrophoresis system
 - Fiber optic-based spectrophotometers
 - Fluorimeter

- FTIR spectrophotometer
- Gas chromatographer-mass spectrometer (GC-MS)
- Gas chromatographers
- High-performance liquid chromatographer
- Ion-selective electrodes
- Lifetime fluorimeter
- Mass spectrometer
- Mercury analyzer
- Meters/analyzers
- Potentiostat/electrochemical analyzer
- pH meters/electrodes
- Total Organic Carbon Analyzer
- UV/Vis/NIR spectrophotometers

- **Biotechnology/Microbiology Lab:** Students use equipment to perform biotechnology-related and microbiological analyses and techniques that include the use of thermal cyclers, microplate readers, incubators, autoclaves, microscopes, gel electrophoresis apparatus, imaging, colony counting and identification procedures.
- **Chemistry Lab:** Students focus on concentration and dilution techniques, analytical separations, pipetting, preparation of samples and standards, titration and gravimetric analysis with emphasis on quality control, proficiency testing and standard methods.

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Student Skills and Capabilities – Preparation for a Career

LST students are well trained to work in laboratory employment settings. Their program has focused on application and many hands-on experiences. The students practice with instrumental, volumetric, gravimetric and biological techniques, and they demonstrate proficiencies in general “bench skills.” The curriculum emphasizes laboratory organization, storage, record keeping, maintenance, and functioning as a member of a team. LST students are well qualified for various positions in the scientific testing sectors of business, industry, government, education and research. They focus on the proper analysis of environmental, biotechnical, forensic, pharmaceutical, food and industrial samples.

Selected Software Used to Develop Technical Skills

Chromatography software
LIMS (Laboratory Information Management Systems)
Microsoft Word, Excel, PowerPoint
Spectroscopy software

Selected Technical Courses Leading to an Associate Degree

Analytical Chemistry	Laboratory Applications
Biotechnology I, II	Laboratory Mathematics
Chemical Separations and Chromatography	Laboratory Methods
Fundamentals of Biology I, II	Laboratory Tools
Fundamentals of Chemistry I, II	Principles of Biochemistry
Integrated Algebra	Principles of Organic Chemistry
	Quantitative Instrumental Analysis

The following employers have hired Laboratory Science Technology students and graduates:

Dow Chemical Company	National Institutes of Health
Eastman Kodak Company	Paradigm Environmental Services
Food and Drug Administration (FDA)	Roswell Cancer Center
James Madison University	Stony Brook University
Merck & Co.	Tufts University
Merieux Nutri Sciences	University of Georgia
Monroe County (NY) Medical Examiner’s Office	University of Massachusetts
	University of Rochester

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RIT/NTID co-op students, graduates and alumni provide employers with highly trained, highly motivated employees with excellent skills. We appreciate your interest in our co-op students and graduates and will work with you through the recruiting process to help you hire the right employee. **For your convenience, access further information and services on our website at www.rit.edu/ntid/coops/jobs/.**