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
- Potentiostal/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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Laboratory Science Technology

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
- Biotechnology
- Chemical Separations and Chromatography
- Fundamentals of Biology I, II
- Fundamentals of Chemistry I, II
- Integrated Algebra
- Introduction to Microbiology
- Laboratory Applications
- Laboratory Mathematics
- Principles of Biochemistry
- Principles of Organic Chemistry
- Quantitative Instrumental Analysis

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

- Cornell University New York State Agricultural Experiment Station
- Dow Chemical Company
- Eastman Kodak Company
- Food and Drug Administration (FDA)
- James Madison University
- Monroe County (NY) Medical Examiner’s Office
- National Institutes of Health
- Naval Surface Warfare Center, Carderock Division
- Novartis Pharmaceuticals
- Ortho-Clinical Diagnostics, Johnson & Johnson Company
- Roswell Cancer Center
- Stanford University (CPIMA)
- Tufts University
- University of Massachusetts
- University of Michigan/Kresge Hearing Research Institute
- University of Rochester
- US Customs and Border Protection
- US Department of Agriculture (USDA)

Contact us:

Shyrl Orrego Scalise
Employment Specialist
NTID Center on Employment
52 Lomb Memorial Drive
Rochester, NY 14623-5604
585-475-6883 (voice)
585-286-4239 (videophone)
585-475-7570 (fax)
sosnce@rit.edu (email)

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/.