The four-year medical laboratory science curriculum leads to the degree of Bachelor of Science in medical laboratory science. The first three years are spent at the University. The fourth year is spent at one of the affiliated hospital schools of medical laboratory science. Upon successful completion of the year, the BS degree is awarded by the University and graduates are then eligible to take a certifying examination.

Because the medical laboratory science curriculum closely parallels that of other majors, such as biology, students from other majors are encouraged to apply.

**Academic Map/Degree Plan at** [www.mnsu.edu/programs/#All](http://www.mnsu.edu/programs/#All)

**POLICIES/INFORMATION**

**Admission to Major** is granted by the department. Minimum university admission requirements are:
- a minimum of 32 earned semester hours.
- a minimum cumulative GPA of 2.00 (“C”).

Contact the department for application procedures.

Students should contact the director of the Medical Laboratory Science program early in their college career for admission to the program, for academic and career counseling, and for information on the process and standards for admission to the professional curriculum, including registration procedures. Because enrollment in the fourth year is limited by the size of classes in the affiliated hospital schools, admission to the program does not ensure admission to the fourth year of the curriculum. Admission into the fourth year hospital clinical internship is competitive.

Students majoring in Medical Laboratory Science have an advisor from their area of interest assigned to them. Questions and concerns pertaining to advising and the assignment of advisors can be answered by Ken Adams, SRC, 125 Trafton Science Center, telephone 507-389-1521.

**GPA Policy.** A GPA of 2.0 is required in both sciences courses and cumulative coursework.

**Probation.** Refer to the College regarding required advising for students on academic probation.

**P/N Grading Policy.** No P/N grades are accepted toward the major requirement in BIO 175.

Agencies and clinical site adjunct faculty participating in the Medical Laboratory Science program include, but are not limited to: Hennepin County Medical Center, Minneapolis, MN; James Fink, M.D.; Ashley Zawacki, MS,MLS(SABC); Mercy College of Health Sciences CLS Program, Des Moines, IA, Kyla Dippold, MS, MT (ASCP), CLS (NCA), St. Luke’s Hospital, Cedar Rapids, IA, Lindsey Mullinbach, MLS (ASCP), Jileah Harris, M.D.; University of Minnesota, Minneapolis, MN, Janice Conway-Klaassen, Ph.D., MT (ASCP) SM, New York Methodist Hospital, Brooklyn, NY, Lori Burkard, MS, MT (ASCP), Lynn Jones, MT (ASCP), Rabia Mir, M.D.; Mercy Medical Center, Sioux City, IA, Mary Smith, MS, MLS (ASCP), Askar Qabani, M.D.; Sanford USD Medical Center, Sioux Falls, SD, Michael Geis, M.D., Renee Rydell, MBA, MS, MT (ASCP), St. Luke’s College, Sioux City, IA, James Guesenberry, ND, Pamela Brisee, MS, MT (ASCP), SC; St. Luke’s College, Sioux City, IA, Janis Guesenberry, ND, Pamela Brisee, MS, MT (ASCP), SC; Students accepted into the clinical internship will be responsible for: Proof of Medical/Hospitalization/Health Insurance; Health Physical Exam; Tuberculosis (TB) testing, and Proof of Immunization which may include the following: Hepatitis B, Measles, Mumps, Rubella, Tetanus, Chickenpox (Varicella), and Influenza. Students may also be required to submit to Drug Screen Testing. Internship sites are required by law to do Background Checks on all students admitted to their medical laboratory science programs.

**Required General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL</td>
<td>270</td>
</tr>
<tr>
<td>CHEM</td>
<td>201</td>
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<td>(choose 4 credits)</td>
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**Major Common Core**

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<td>CHEM</td>
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<td>CHEM</td>
<td>360</td>
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**Major Restricted Electives**

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<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 360</td>
<td>Principles of Biochemistry (4)</td>
</tr>
</tbody>
</table>

**Required Minor:** None.

**COURSE DESCRIPTIONS**

**MEDIT 410 (1-10) Clinical Hematology I**

- Theory of blood cell formation; disease states; hemostasis, microscopic examination of blood/bone marrow films; practical experience with instruments and techniques which determine major hematologic and clotting parameters; quality control.

**MEDIT 411 (1-10) Clinical Immunohematology I**

- Major blood group systems; principles and procedures for antigen/antibody detection; identification; donor blood collection, preservation, processing, component therapy; transfusion reaction evaluation; Rh immune globulin; quality control.

**MEDICAL LABORATORY SCIENCES BS**

Degree completion = 120 credits

- Required General Education
  - BIOL 270 Microbiology (4)
  - CHEM 201 General Chemistry I (5)
  - (choose 4 credits)
  - MATH 112 College Algebra (4)
  - MATH 115 Pre-Calculus Mathematics (4)
  - MATH 121 Calculus I (4)
  - (choose 4 credits)
  - BIOL 105 General Biology I (4)
  - BIOL 105W General Biology I (4)

- Major Common Core
  - BIOL 106 Orientation to Clinical Laboratory Science (1)
  - BIOL 211 Genetics (4)
  - BIOL 220 Human Anatomy (4)
  - BIOL 330 Principles of Human Physiology (4)
  - BIOL 430 Hematology/Introduction to Immunology (4)
  - CHEM 202 General Chemistry II (5)
  - CHEM 320 Organic Chemistry I (5)
  - CHEM 360 Principles of Biochemistry (4)

- Major Restricted Electives
  - (choose 3 credits)
    - HTH 475 Biostatistics (3)
    - STAT 154 Elementary Statistics (3)
  - (choose 30-39 credits)
    - Internship credits are determined in consultation with advisor.
    - MEDIT 410 Clinical Hematology I (1-10)
    - MEDIT 411 Clinical Immunohematology I (1-10)
    - MEDIT 412 Clinical Immunohematology II (1-10)
    - MEDIT 413 Clinical Chemistry I (1-10)
    - MEDIT 414 Clinical Microbiology I (1-10)
    - MEDIT 415 Clinical Microscopy I (1-10)
    - MEDIT 416 Clinical Hematology II (1-10)
    - MEDIT 417 Clinical Immunohematology II (1-10)
    - MEDIT 418 Clinical Chemistry II (1-10)
    - MEDIT 419 Clinical Microbiology II (1-10)
    - MEDIT 420 Clinical Microscopy II (1-10)
    - MEDIT 499 Individual Study (1-6)

- CHOOSE 1 CLUSTER
  - Hennepin County Medical Center, Minneapolis, MN
    - BIOL 380 Blood Banking/Urinalysis (3)
    - BIOL 475 Medical Microbiology (4)
  - St. Luke’s Hospital, Cedar Rapids, IA / St. Luke’s College, Sioux City, IA / Mercy College of Health Science, Des Moines, IA / Sanford USD Medical Center, Sioux Falls, SD / New York Methodist Hospital, Brooklyn, NY / Mercy Medical Center, Sioux City, IA
    - BIOL 475 Medical Microbiology (4)
  - University of Minnesota, Minneapolis, MN and Rochester, MN
    - CHEM 321 Organic Chemistry II (3)
    - CHEM 331 Organic Chemistry II Lab (1)
  - (choose 4 credits)
    - MATH 121 Calculus I (4)

- Required Minor: None.
MEDT 412 (1-10) Clinical Immunology I
Antigen/antibody structure function and interaction; basic principles and procedures of humoral and cellular immunology; performance and clinical correlation of serological testing; quality control.

MEDT 413 (1-10) Clinical Chemistry I
Identification and quantification of specific chemical substances in blood and body fluids by analytical techniques; clinical correlation with disease states; principles of instrumentation; data processing; toxicology; quality control.

MEDT 414 (1-10) Clinical Microbiology I
Theory and techniques of cultivation, isolation and identification of bacteria, fungi, parasites and viruses; determination of sensitivity to antimicrobial agents; clinical correlation to disease states, asepsis; environmental monitoring; quality control.

MEDT 415 (1-10) Clinical Microscopy I
Theory of renal function in health and disease; renal function tests including chemical and microscopic examination of urine; analysis of fecal specimens, gastric, spinal fluid and other body fluids; quality control.

MEDT 416 (1-10) Clinical Hematology II
A continuation of Clinical Hematology I

MEDT 417 (1-10) Clinical Immunohematology II
A continuation of Clinical Immunohematology I.

MEDT 418 (1-10) Clinical Chemistry II
A continuation of Clinical Chemistry I.

MEDT 419 (1-10) Clinical Microbiology II
A continuation of Clinical Microbiology I.

MEDT 420 (1-10) Clinical Microscopy II
A continuation of Clinical Microscopy I.

MEDT 499 (1-6) Individual Study
Related topics in medical technology.