

Attention Science Majors!

Consider a Career in Clinical Laboratory Science



- B.S. degree in Medical Technology
- \$45,000 / year starting salary
- Health care profession in high demand
- Great background for forensic science
- Excellent degree for admission to medical, dental, or pharmacy schools, Ph.D. programs, etc.
- Numerous and varied job opportunities
- Scholarships available
- Applications accepted until fall class is filled

INFORMATION

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University of Minnesota, Minneapolis

The University of Minnesota is an equal opportunity educator and employer.

Medical Technology General Information

The medical technology program (also called clinical laboratory science) was established at the University of Minnesota in 1922 to prepare men and women for professional work in laboratory science and advanced study. This program provides a strong foundation in the sciences together with rich experiences in the clinical laboratory. Approximately 20 percent of medical technology graduates go on to complete an advanced degree.

Clinical laboratory scientists (medical technologists) perform many and varied laboratory analyses and use critical thinking in determining the correctness of test results. They recognize the interdependency of testing information and have knowledge of physiologic and pathologic conditions affecting results in order to validate them. In many health care settings, they provide data used by physicians in determining the presence, extent, and, as far as possible, causes of disease.

The clinical laboratory professional is qualified by academic and applied science education to provide service and research in clinical laboratory science and related areas in rapidly changing and dynamic healthcare delivery systems.

Clinical laboratory professionals perform, develop, evaluate, correlate and assure accuracy and validity of laboratory information; direct and supervise clinical laboratory resources and operations; and collaborate in the diagnosis and treatment of patients.

The clinical laboratory professional has diverse and multi-level functions in the areas of analysis and clinical decision-making, information management, regulatory compliance, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed or performed.

Clinical laboratory professionals possess skills for financial, operations, marketing, and human resource management of the clinical laboratory.

Clinical laboratory professionals practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, other health care professionals, and others in laboratory practice as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment and a demonstration of commitment to the patient are essential qualities. Communications skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education.

Laboratory professionals demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Source: Standards of Accredited Educational Programs for the Clinical Laboratory Scientist/Medical Technologist National Accrediting Agency for Clinical Laboratory Sciences, Chicago, Illinois.

Tests and procedures are performed or supervised by laboratory technologists in hematology, coagulation, microbiology, immunohematology, immunology, clinical chemistry, and urinalysis. Subspecialty areas in which laboratory personnel work include such fields as molecular diagnostics, cytogenetics, fertility testing, flow cytometry, tissue typing, bone and skin banks, forensics, and infection control.

As complexities of clinical laboratories increase, many medical technologists specialize in immunohematology, hematology, microbiology, chemistry, immunology, virology, coagulation, administration, computer science, education, quality assurance, and other areas. There are opportunities for graduates to work in hospital laboratories, clinics, physician offices, public health agencies, research, and industry.

As a general rule, a student who has excelled in scientific subjects in high school will succeed in medical technology.

The program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 8410 West Bryn Mawr, Suite 670, Chicago, IL 60631 (773-714-8880; e-mail INFO@naacsls.org).

Mission Statement

The mission of Medical Technology is to be a leader in educating clinical laboratory science professionals. In accordance with the University of Minnesota's mission, we strive to do this in an environment that embodies the values of academic freedom, responsibility, integrity, and cooperation; that provides an atmosphere of mutual respect, free from racism, sexism, and other forms of prejudice and intolerance; that assists individuals, institutions, and communities in responding to a continuously changing world; that is conscious of and responsive to the needs of the many communities it is committed to serving; that creates and supports partnerships within the University, with other educational programs, and with communities to achieve common goals; and that inspires, sets high expectations for, and empowers the individuals within its community.

Medical Technology pursues this mission through teaching, research, and actively working with the health care community to assist in meeting the clinical laboratory needs of the state of Minnesota. Specifically, Medical Technology

- educates students to be clinical laboratory professionals who have the knowledge, skills, and values to provide competent and ethical practice in clinical laboratory science;
- develops new knowledge about the practice of clinical laboratory science;
- helps communities and other professionals develop an awareness and understanding of the role of the clinical laboratory professional and the work they perform;
- collaborates with other professionals within the health care community to assess the changing needs of the clinical laboratory, designs solutions to meet the challenges, and monitors the quality of laboratory practice; and
- provides continuing education opportunities to practicing clinical laboratory professionals.



Facilities

Health sciences facilities are in a complex of buildings on the East Bank of the Minneapolis campus, including the Mayo Memorial Building, Malcolm Moos Health Sciences Tower, Weaver-Densford Hall, and the Phillips-Wangensteen Building. Close to or connected with the complex are Fairview-University Medical Center, Dwan Variety Club Cardiovascular Research Center, Veterans of Foreign Wars Cancer Research Center, and Children's Rehabilitation Center. Extensive resources and services of the Bio-Medical Library, including the Learning Resources Center, are housed in Diehl Hall.

These facilities provide learning, research, and internship sites for many students. They are excellent research centers, not only for studying diseases, healthy physiological processes, and environmental health, but also for developing new procedures and delivering expert health care. The proximity of the Academic Health Center units to each other and to the rest of the campus facilitates interdepartmental communication and underscores the interdisciplinary nature of health care. The Academic Health Center units also maintain affiliations with many hospitals and health care facilities around the Twin Cities and greater Minnesota, which afford students access to a wide spectrum of health care situations.

Clinical experiences for University of Minnesota medical technology students are available at the Veterans Affairs Medical Center, Allina Laboratories, Fairview Health Services, Mayo Clinic (Rochester), the North Central Blood Services of St. Paul, Regions Hospital (St. Paul), HealthEast Hospitals (St. Paul), Park Nicollet Health Services, St. Cloud Hospital (St. Cloud), Immanuel St. Joseph's Hospital (Mankato), Lakeview Hospital (Stillwater), Rice Memorial Hospital (Willmar), North Memorial Medical Center (Robbinsdale), and Ridgeview Medical Center (Waconia).



Admission

The Medical Technology Program sets its own standards and requirements for admission. These include a strong background in the natural sciences (specifically biology, chemistry, and physiology), as well as in the social and behavioral sciences. Medical Technology recommends that applicants be genuinely interested in human services and sincerely committed to promoting the public's health and general welfare. Students generally enter the program at the beginning of their junior year.

Application Process

The medical technology curriculum consists of the pre-professional program at the University of Minnesota or its equivalent at another regionally accredited institution and the professional program in the Division of Medical Technology, which is part of the Academic Health Center, Center for Allied Health Programs.

Admission to the Pre-professional Program—Students who are applying to enroll in a pre-professional program must meet the admission criteria and follow academic regulations of that college.

The medical technology sequence is based on entrance to the professional program in the fall semester of year three or four, depending on completion of prerequisites. Admission to year three of the curriculum is preferred. Space is very limited in year 4 admission.

Admission to the preprofessional program at the University of Minnesota does not assure admission to the professional program. **Admission to the Professional Program**—For admission to the Division of Medical Technology, a student must have completed 60 semester credits, including required courses. The major criterion for admission is satisfactory academic performance as judged by the student's grade point average (GPA) in prerequisite courses. Required prerequisite science courses must be completed by the end of spring term. Students are admitted once each year for the fall semester. Admission to the professional program is competitive because of the limited number of students who can be accommodated in the teaching and clinical facilities.

Students in residence at the University of Minnesota who expect to complete the requirements for admission to the professional program must file a Change of College form with the One Stop Student Services Center, on-line, by March 1. (Priority deadline is March 1. Applications are accepted until the class is full.) Those who have sufficient credits but have course deficiencies should consult with Medical Technology adviser regarding their status.

Students from other regionally accredited colleges and universities may transfer to the University of Minnesota to complete the medical technology program. Courses completed that are equivalent to those offered at the University of Minnesota are accepted to satisfy the requirements for admission to Medical Technology. Students who have a baccalaureate degree in a science curriculum and have completed required courses may finish the program in 15 months, as space is available in affiliated laboratories. Students transferring from other colleges may **apply on-line by referring to the admissions Web site <<http://admissions.tc.umn.edu>> for other information or an online application. Applications must be filed with the Office of Admissions by March 1. It is strongly advised that transfer students ascertain their status by writing to the Adviser, Medical Technology, University of Minnesota, MMC 711, 420 Delaware Street S.E., Minneapolis, MN 55455.**

English Proficiency—If students are not native speakers of English, they must take the Test of English as a Foreign Language (TOEFL) or the Michigan English Language Assessment Battery (MELAB). To register for the TOEFL, students should contact the agency that handles TOEFL registration in their country or write to the Educational Testing Service (Box 6151, Princeton, NJ 08541, USA) at least 10 weeks before any scheduled test date. If students are already in the Twin Cities area, they may register for the MELAB with the Minnesota English Center, University of Minnesota, 315 Nolte Center for Continuing Education, Minneapolis, MN 55455, or call 612-624-1503. To register for the MELAB outside the Twin Cities area, contact the English Language Institute, Testing and Certification Division, University of Michigan, Ann Arbor, MI 48109, USA, or call 734-764-2416. The minimum scores required are 570 for the TOEFL (230 on the computer-based exam) or 88 on the internet TOEFL or 84 for the MELAB.

Those who have completed one year of instruction at a college or university where English is the language of instruction and composition completed may have the English requirement waived.

Degrees

Bachelor of Science—The Division of Medical Technology offers the bachelor of science (B.S.) degree. **Master of Science**—Graduate work in clinical laboratory science is available for qualified candidates who wish to prepare for a career of research, teaching, or work in industry. A master of science (M.S.) program in clinical laboratory science is offered only under Plan A (master's degree with thesis). Each student must complete a thesis involving independent research in one of the subareas of this field under the direction of an adviser.

Admission requirements include a bachelor's degree from an accredited institution of higher learning with sufficient scholarly attainment in medical technology or chemistry and the biological sciences to justify graduate work in these areas.

For more information, see the *Graduate School Catalog* or contact the Clinical Laboratory Science Graduate Program Coordinator, MMC 711, 420 Delaware Street S.E., Minneapolis, MN 55455-0374 (612-625-8952).



Policies

Immunizations—Upon admission to the medical technology program, students are required to submit proof of their immunizations and vaccinations:

Immunization policy— <http://www.bhs.umn.edu/services/AHCImmunizationMemo2004v2.pdf>

Immunization form—http://www.bhs.umn.edu/services/AHC_ImmForm.pdf

Health Insurance Coverage—Medical technology students are expected to carry health insurance to cover emergency medical situations. Specifics on the AHC health insurance policy can be located at the following web site <http://www.bhs.umn.edu/insurance/ahc.htm>. Students should carry their insurance information at all times on campus, at clinical sites, and community education rotations.

Background Check—Medical technology students are placed in a variety of clinical settings during their clinical coursework. In accord with Minnesota law, a criminal background check is required of each student before clinical courses. The Division of Medical Technology arranges this check.

Satisfactory Academic Progress—Students in the professional program are subject to the regulations established by the Division of Medical Technology and must maintain satisfactory academic progress.

Satisfactory performance is considered to be not only a passing level in scientific and technical skills together with theoretical knowledge, but also complete personal integrity and honesty.

Students not achieving satisfactory progress may be placed on scholastic probation upon recommendation of the Student Scholastic Standing Committee (SSSC). This committee is composed of Medical Technology faculty and student representatives, as appropriate.

Students' work is considered unsatisfactory when they earn less than a C- grade average (1.67 grade points for each credit) for any course in a given year or semester. In addition, students must earn a minimum grade of C- in selected courses to enroll in related clinical rotations, and maintain an overall GPA of 2.00 in the professional program.

If students receive an unsatisfactory grade in a course, remedial work in the course may be provided, if possible; if not, students must repeat the course the next time it is offered. If students receive an unsatisfactory grade in more than one course, either concurrently or in different semesters, the matter is referred to the SSSC for investigation and action. If the committee decides students should not continue in the curriculum, students are notified. Unsatisfactory grades in two courses are sufficient basis for dismissal.

Medical Technology Essential Functions

To successfully complete a clinical laboratory science program, medical technology students must be able to perform the following functions.

- *Communication skills*—Must be able to communicate effectively in written and spoken English; comprehend and respond to both formal and colloquial English—person-to-person, by telephone, and in writing; appropriately assess nonverbal as well as verbal communication.
- *Locomotion*—Must be able to move freely from one location to another in physical settings, such as the clinical laboratory, patient areas, corridors, and elevators.
- *Small motor skills*—Must have sufficient eye-motor coordination to allow delicate manipulations of specimens, instruments, and tools. Must be able to grasp and release small objects (e.g., test tubes, microscope slides); twist and turn dials/knobs (e.g., for a microscope, balance, or spectrophotometer); and manipulate other laboratory materials (e.g., reagents and pipettes) in order to complete tasks.
- *Other physical requirements*—Must be able to lift and move objects of at least 20 pounds. Must have a sense of touch and temperature discrimination.
- *Visual acuity*—Must be able to identify and distinguish objects macroscopically and microscopically; read charts, graphs, and instrument scales.
- *Safety*—Must be able to work safely with potential chemical, radiologic, and biologic hazards and follow prescribed guidelines for working with all potential hazards, including mechanical and electrical.
- *Professional skills*—Must be able to follow written and verbal directions; work independently and with others and under time constraints; prioritize requests and work concurrently on at least two different tasks; maintain alertness and concentration during a normal work period.
- *Stability*—Must possess the psychological health required for full use of abilities and be able to respond to others in a collegial manner; must be able to recognize emergency situations and take appropriate actions.
- *Affective (valuing) skills*—Must show respect for self and others and project an image of professionalism, including appearance, dress, and confidence; and have complete personal integrity and honesty. Must adhere to appropriate professional deportment.
- *Application skills* — Must be able to apply knowledge, skills, and values learned from previous coursework and life experiences to new situations.

Certification and Placement

Medical Technology graduates are eligible to take national examinations for certification as medical technologists or clinical laboratory scientists. These examinations are conducted by national certifying agencies. Many organizations/institutions require certification for employment.

Program graduates are assisted in finding employment by Medical Technology adviser. Notices of employment opportunities in the field are received from all parts of the United States and are posted in this office.

Licensure

The licensed medical technologist practices in accordance with the requirements of individual state laws. In some states, a medical technologist must participate in continuing education courses for license renewal. Minnesota does not require a license to practice.

Advising

The Division of Medical Technology offers centralized advising services to undergraduates currently enrolled or interested in medical technology. In addition, the medical technology adviser works closely with the College of Liberal Arts natural science advisers. For more information, contact the medical technology office, 15-170 Phillips-Wangensteen Building (612-625-9490).

Special Learning Opportunities and Resources

Minority Program—The Academic Health Center is committed to the recruitment and retention of minority persons who come from groups underrepresented in the health professions. Advising and special courses are offered through the Martin Luther King Program. The Multicultural Center for Academic Excellence is also available for the students which is located in 185 Klæber Court.



Scholarships

Medical Technology offers scholarship programs for students in the professional program. Scholarships are provided on the basis of scholastic achievement, need, and professional promise. For more information, contact the medical technology office, 15-170 Phillips-Wangensteen Building (612-625-9490) or check the MT web site at <http://medtech.umn.edu/medtech/admission/scholarships.html>.

Career Paths

The Extended Career Paths in Medical Technology chart represents positions taken by University of Minnesota medical technology graduates. It depicts the opportunity and versatility afforded by a medical technology (laboratory science) degree for positions not only in hospital laboratories, but also in industry, research, public health, government, information systems, consulting, reference (private) laboratories, education, and other areas.

Student Organizations

Council for Health Interdisciplinary Participation—The Council for Health Interdisciplinary Participation (CHIP) is an interdisciplinary student service organization dedicated to enhancing the quality of life and education of all Academic Health Center students. Activities include noontime lectures, evening workshops, and weekend symposia in areas such as bioethics, international health, alternative health care, and women's issues. CHIP publishes a newsletter featuring announcements of upcoming health sciences events, volunteer opportunities, and articles about topics of current interest to students. CHIP headquarters are located in an informal, comfortable lounge in 1-425 Malcolm Moos Health Sciences Tower. For more information, call 612-625-7100. **Medical Technology Student Council**—Students in the professional program are represented on the Medical Technology Council by elected members from each class. The council promotes student-faculty relationships, sponsors social and educational activities, and considers matters affecting students in the program. **Student Membership in Professional Organizations**—Medical technology undergraduates are eligible for student membership in the American Society for Clinical Laboratory Science. Medical technology students are also urged to participate in the activities of the Academic Health Center's Council for Health Interdisciplinary Participation (CHIP) and other University student organizations

Campus Contacts

Patricia Solberg, Medical Technology, University of Minnesota, MMC 711, 420 Delaware Street S.E., Minneapolis, MN 55455-0374. Offices at 15-170 Phillips-Wangensteen Building (612-625-9490; e-mail medtech@umn.edu). Web site: <http://medtech.umn.edu>.

Please note that there is a Health Careers Center at 2-571 Moos Tower, MMC 502, 420 Delaware Street S.E., Minneapolis, MN 55455, 612-624-6767. Their web site www.healthcareers.umn.edu provides career information, an event schedule, and much more.

Extended Career Paths in Medical Technology

Hospital/Medical Center:	Laboratory Areas	Health Care Administration	Health Care Agency/Government
<p>Acute care Andrology/Fertility testing Blood bank Bone marrow Cell markers Chemistry Coagulation Computer science Components - Transfusion service Cytogenetics Cytodiagnostic urinalysis Cytology/Histology Development laboratory Drug analysis (toxicology) Endocrinology Flow cytometry Forensic science Genetics Hematology Immunology Immunopathology Immunophenotyping Infection control Laboratory supervisor or administrator</p>	<p>Microbiology Molecular diagnostics Mycology Nuclear medicine Out patient or clinic laboratory Parasitology Pathology - Surgical, autopsy Phlebotomy/Specimen processing Platelet studies Photography/Illustration (e.g., in forensic medicine) Quality assurance Serology Skin or bone bank Special stains STAT (emergency) laboratory Tissue typing Transfusion technical specialty Transplant services Urinalysis Virology</p>	<p>Clinic manager/administrator Coder-Abstractor (business or medical records office) Consultant service specialist Personnel director Emergency medical services coordinator Group practice administrator Financial manager/planner Hazardous waste coordinator Health care administrator Health insurance administrator Health policy analyst Health promotion coordinator Hospital quality assurance coordinator Infection control officer Epidemiologist Laboratory supervisor Laboratory director Laboratory utilization review coordinator Long-term care administrator Mental Health administrator Purchaser (laboratory/hospital/medical center) Staffing coordinator (laboratory or home care)</p>	<p>Administrator for Veterans Affairs hospital Biometrist Crime laboratory scientist Department of Health - Educator Department of Health - Proficiency test consultant Employee recruiter/Placement officer Environmental health specialist (inspector) Environmental pathology technologist Fraud investigator Health Management Organization Health educator JCAHO Survey team member/CAP inspector Medical examiner investigator (e.g., for coroner) Military service - Armed Forces, ROTC, National Guard NASA mission specialist Patient educator Private investigator FBI/Special agent (forensic lab)</p>
Management Information System	Research - Basic and Applied	Industry (U.S. or International)	
<p>Biometrician Director - Division of Biometry Hospital Information Systems Team leader Installer/Educator Programmer Systems analyst</p>	<p>Associate scientist/Scientist Clinical trial coordinator Director of research Research analyst Research assistant</p>	<p>Advisor to or inventor of "home" or other lab tests Biomedical specialist - Occupational health Cell culture consultant Clinical trial coordinator Compliance coordinator Computer consultant Documentation supervisor Editor/manager - Medical publications Food technologist - Quality assurance manager Health care reimbursement coordinator Health promotion and education specialist Industrial hygiene specialist Installation specialist</p>	<p>Insurance underwriter Manager - Health claims administration Medical claims reviewer/Auditor/Insurance processor Medical consultant (TV/Movie industry) Medical fee analyst - Insurance Owner/Director of employee placement service Product specialist Quality control/Quality assurance monitor/Director Research and development technologist or director Research scientist Risk management representative Insurance Salesperson Technical representative</p>
Other Professional Routes		Education	Humanitarian Work
<p>Accounting Consultant to physician office laboratories Dentistry Health radiation science Laboratory scientist Law (e.g., patent attorney) Legislature - Politician, lobbyist, regulations writer</p>	<p>Medical Physics/Engineering Medicine Optometry Public health Reference/Independent/ Commercial laboratory scientist Veterinary medicine</p>	<p>Academician Allied health dean/Health sciences administrator Education coordinator or program director Educator of students in clinical settings Faculty member in CLS/CLT/Cyto/SBB program Higher education administrator Instructor in veterinary medicine or other allied health program Medical community services program coordinator</p>	<p>Medical missionary work Peace Corps Project HOPE, others</p>

Medical Technology Degree Program

Medical Technology

B.S.

Admission Requirements—Prerequisite courses include composition, general biology, mathematics (college algebra or calculus), general inorganic chemistry, physiology, and organic chemistry.

A minimum preferred GPA of 2.50 for entrance to the program. Recent entering class average GPAs have been approximately 3.32.

Degree Requirements

The program requires a minimum of 120 credits of which at least 60 credits are prerequisites and liberal education courses (see liberal education Web site at <www.onestop.umn.edu/registrar/libed/>). Junior courses include biochemistry, microbiology, and genetics. Senior courses involve two semesters of professional coursework in hematology, coagulation/instrumentation, clinical chemistry and urinalysis, microbiology/mycology/virology/parasitology and immunohematology/immunology/molecular diagnostics. All required and highly recommended courses, e.g., anatomy and pathophysiology must be taken A-F.

Writing Intensive Courses—Students must take four writing intensive courses. These courses are in addition to freshman writing as currently required. At least two of the four required writing intensive courses must be taken at 3xxx or above. MedT 4127W—Introduction to Management and Education I is required for the program and serves as one of the upper division writing intensive courses. Course choices can be found at <www.onestop.umn.edu/registrar/libed/writing.html>.

Required Courses

Preprofessional Program

Biol 1009—General Biology Phsl 3051—Human Physiology Chem 1021-1022—Chemical Principles I-II Chem 2301-2302—Organic Chemistry I-II EngC 1011—University Writing and Critical Reading Two from Math 1031, 1142, 1155, 1271, 1272, Stat 3011

Professional Program

Year 3

Biol 4003—Genetics or GCD 3022—Genetics BioC 3021—Biochemistry Biol/MicB/VPB 2032—General Microbiology With Laboratory

Year 4

MedT 4064—Introduction to Clinical Immunohematology MedT 4065—Introduction to Clinical Immunohematology: Laboratory MedT 4100—Virology, Mycology, and Parasitology for Medical Technologists MedT 4104—Principles of Diagnostic Microbiology: Lecture MedT 4105—Principles of Diagnostic Microbiology: Laboratory MedT 4127W—Introduction to Management and Education I MedT 4251—Hematology I: Basic Techniques MedT 4252—Hematology II: Morphology and Correlation MedT 4253—Hemostasis MedT 4310—Clinical Chemistry I: Lecture MedT 4311—Clinical Chemistry I: Laboratory Applications MedT 4320—Clinical Chemistry II: Lecture MedT 4321—Clinical Chemistry II: Laboratory Applications MedT 4400—Immunological and Molecular Basis of Laboratory Testing

Clinical Courses

MedT 4082—Applied Clinical Chemistry MedT 4085—Applied Clinical Hematology MedT 4086—Applied Clinical Immunohematology MedT 4088—Applied Diagnostic Microbiology MedT 4089—Specialty Rotation

Electives—Recommended courses MicB 4131—Immunology InMd 3001—Human Anatomy LaMP 4177—Pathology for Allied Health Students MedT 1010—Orientation in Medical Technology (S-N) (for those interested in the field) Phar 1002—Health Sciences Terminology

Clinical Rotations

After completing two semesters of professional coursework, students spend 22 weeks in the clinical laboratories of various health care institutions in the Twin Cities and Rochester, Minnesota, including six weeks in clinical chemistry, five weeks in hematology and coagulation, five weeks in immunohematology, five weeks in microbiology, and one week in a specialty laboratory area such as cytogenetics.



UNIVERSITY OF MINNESOTA MEDICAL TECHNOLOGY

Suggested Curriculum Sequence

	FALL	SPRING	SUMMER
Year One	Gen. Chem. 1021 (4) Math (3-5) Core/Theme Elective (4) Core/Theme Elective (4) MedT 1010 Orientation (1)	Gen. Chem. 1022 (4) Gen. Biol. 1009 (4) Engl. Comp 1011 (4) Core/Theme Elective (4)	
Year Two	Organic Chem. 2301 (3) *InMd 3001 Human Anatomy (4) Math or Stat (3-5) Core/Theme Elective (4)	Organic Chem. 2302 (3) Physiology 3051 (4) Core/Theme Elective (4) Core/Theme Elective (4)	
Year Three	Biol 2032 (Micro) (4) BioC 3021 (Biochem) (3) Upper Div Writing Intensive (4) Core/Theme Elective (4)	Biol 4003 (Genetics) (3) *LaMP 4177 (Path.) (3) Core/Theme Elective (4) Elective (3)	

Year Four	MedT 4251 Heme (3) MedT 4104/4105 Micro (4) MedT 4310 Chem I Lec (2) MedT 4311 Chem I Lab (2) MedT 4400 imm& Molec Basis of Lab Tests (1)	MedT 4252 Heme Morph & Corr (2) MedT 4253 Hemostasis (1) MedT 4100 Vir/Mycol/Parasit (2) MedT 4320 Chem II Lec (2) MedT 4321 Chem II Lab (2) MedT 4064/4065 Immunohematology (4) MedT 4127 (WI) Management/Education (1)	Clinical Course Work (4-5) Assigned when available MedT 4082 (Chem) 6 wks MedT 4085 (Heme) 5 wks MedT 4086 (BB) 5 wks MedT 4088 (Micro) 5 wks MedT 4089 (Spec) 1 wk
Year Five	Clinical Course Work (5-6)	Clinical courses only if needed (A total of 10 credits of clinical courses are required)	

Course Electives:

*Strongly recommended courses are: and MicB 4131 (Immunology) 3 cr, InMd 3001 (Human Anatomy) - 4 cr., and LaMP 4177 (Pathology) - 3 cr.

Students may choose other courses from a “pool” as electives: cell biology, statistics, computer science, business, and others.

Note: The University requires that a student complete core and theme electives. Refer to onestop.umn.edu for specifics. CLE (liberal education requirements). To complete the prerequisites in two years, elective courses must satisfy both a diversified and designated theme. To finish in a timely fashion, it is expected that a student takes 14-15 credits per semester. Four writing intensive courses (WI) are required (two lower division and two upper division).

Students usually enter the Medical Technology program at year 3. However, those who have completed 3 or 4 years of school, with required courses completed, may enter year 4 and complete the curriculum in 15 months. The 15-month plan depends on space availability. Contact Medical Technology at 612-625-9490 if you have questions about the program and curriculum.

Information is provided from
 Medical Technology for the
 2006-2007 professional program.
 (Fall 2006 admission data - year 3)



Home

74% Twin Cities Metro
 10% Greater Minnesota
 13% other states
 3% other country



Level of Education

Having previous degrees:

21% bachelors of science
 or bachelor of arts
 16% associate of arts or
 associate of science

26

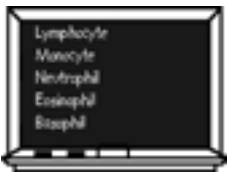
Age

Average age: 26
 Range: 20-42



Gender

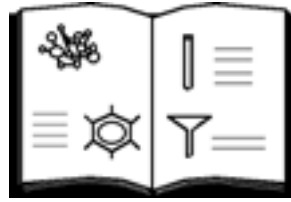
42% male students
 58% female students



Transfer Credits

76% of students
 transfer credits from
 other institutions

Program Prerequisites



Science Courses

(semester credits)

General Biology	4
Human Physiology	4
Math	4-5
General Chemistry	8
Organic Chemistry	6
Statistics	4

Admission Data

Class Size Maximum: 40

Cumulative GPA

Class average: 3.32
 Minimum: 2.5 Preferred



Required Science Course GPA

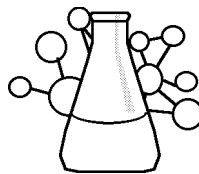
Class average: 3.32
 Minimum: 2.5 Preferred

Ethnic Origin

32% African American
 21% Asian/Pacific Islander
 47% Caucasian

Placement

2005 Class Employment Data



72% Employed in Twin Cities
 8% Employed in another state
 3% Employed in rural Minnesota
 8% Employed at Mayo-Rochester
 6% Enrolled in professional school
 3% Unknown

96% Employed in a hospital

Placement of U of MN Medical Technology Graduates

Graduation Year	2002	2003	2004	2005
Total No. Students who graduated	26	29	28	35
#/% Employed at U or Affiliated Hospitals	17/65%	23/79%	24/86%	27/77%
#/% Employed at Univ/Fairview U Med Ctr	9/35%	13/45%	10/36%	15/43%
#/% Employed at Another Twin Cities Hosp.	3/12%	1/4%		
#/% Employed in MN Outside of Metro Area	2/8%		1/4%	4/11%
#/% Employed at HMO - Twin Cities				
#/% Employed in Mpls/St. Paul	20/77%	25/86%	23/82%	25/72%
#/% Employed in Another State	3/12%	2/9%	4/14%	3/8%
#/% Graduate School		1/4%*		2/6%
#/% Employed in Research				
#/% Employed in Industry				
#/% Employed in Clinic	1/4%	1/4%	1/4%	
#/% Employed in Reference Lab: ARC, MDH Medtox, Sm. Kline, Viromed, Mem. Bld. Ctr.				
#/% Left state, employment unknown				
#/% Unemployed		1/4%		1/3%
#/% Remaining in MN	22/85%	27/93%		32/92%
#/% Employed in another country	1/4%	1/4%		

Updated 9/29/06 by Patricia Solberg

*Employed and in graduate school

**Pre-Medical Technology/Clinical Laboratory Science
University of Minnesota, Twin Cities
Planning Sheet, 2006-2007**

NAME _____ ADVISER _____

ID# _____ DATE _____

Certain courses are required for admission to the Medical Technology major; some of these courses (as noted in bold print on the list below) also fulfill University of Minnesota, Twin Cities (UMTC) Liberal Education Requirements, which must be met by students entering a baccalaureate degree program at the University. Further information about the UMTC requirements may be found in the class schedule each semester. Use this planning sheet in consultation with an adviser and in conjunction with your degree audit. It is recommended, but not required that you complete the UMTC requirements prior to admission. Admission is competitive.

Requirement	University of MN courses that fulfill requirement			
	Semester course	Course completed	Credit total	Grade
English	EngC 1011 or 1012 or 1013 or 1014 or 1015 or 1016 (f,s)			
Mathematics Requirement 2 courses *One math course at the level of college algebra or above and one course in calculus or statistics	Math 1031 or 1051 or 1142 or 1271 (f,s)			
	Math 1151 or 1142 or 1271 or 1272 or Stat 3011(f,s) or Psy 2801(f,s)			
General Chemistry 8 sem/8 qtr cr	Chem 1021 (f,s)			
	Chem 1022 (f,s)			
	Chem 2301 (f,s)			
	Organic Chemistry lecture 6 sem/8 qtr cr	Chem 2302 (f,s)		
Organic lab (Chem 2311) is recommended, but not required.				
Biology 4 sem/5 qtr cr	Biol 1009 (f,s)			
Physiology 4 sem/5 qtr cr	Phsl 3051 (f,s)			
Liberal Education Requirements	Students seeking bachelor's degrees also need to complete Liberal Education requirements. For specific information, refer to the liberal education section in the Class Schedule or request a degree audit from your advising office.			

All prerequisite courses must be taken A/F.

NOTE: Medical Technology students are placed in a variety of clinical settings during their clinical coursework. In accord with Minnesota law, a criminal background check is required of each student before clinical courses. The Division of Medical Technology arranges this check.

Scheduling Courses: Care must be taken in scheduling courses; they may not be available every semester. Talk with your adviser for course planning and sequencing.

Please keep this planning document and bring it with you to each adviser meeting. Course requirements and prerequisites may change; please consult with an adviser on a regular basis. This document is available in alternate formats upon request.

How to Apply

- ❖ Obtain appropriate application form from Williamson Hall: **U of M Students** – “Request for Change of College” form, go to onestop.umn.edu and it is located under forms online – changing your academic status. **Non U of M Students** – “Application for Admission to the University” form, 240 Williamson or apply online at: http://admissions.tc.umn.edu/admissioninfo/trans_applications.html
- ❖ The priority deadline is March 1. Qualified applicants will be considered until the class is filled.

Other Recommendations

- ❖ MedT 1010, Orientation to Medical Technology, 1 cr.
- ❖ A course in medical terminology (Phar 1002) is strongly recommended.
- ❖ Students must complete 60 semester or 90 quarter credits prior to admission to the professional program.
- ❖ Students planning to pursue graduate programs should take college level calculus (Math 1271 and 1272).
- ❖ Human Anatomy is recommended. U of M students should take Anat 3001.

Admission

Your cumulative and required science course grade point average (GPA) is considered for admission. A typical GPA range for admitted students is 3.1 – 3.3.

Advising

Advising for pre-Medical Technology students is provided in the Medical Technology office, 15-170 Phillips-Wangensteen Building. For more information, call Pat Solberg at (612) 625-9490.

Scholarships

The Medical Technology office has information on opportunities.

Immunization and Insurance

Immunizations. Upon admission to the AHC academic programs, students are required to submit proof of certain immunizations and vaccinations. Please note that the hepatitis vaccine series takes several months to complete. Specific requirements are available on the web <http://www.bhs.umn.edu/services/AHC.htm#AHC>

Health Insurance Coverage. It is expected that AHC students carry health insurance coverage to cover emergency medical situations. It is recommended that the AHC students carry the AHC student insurance policy because of its scope of coverage or other personal, spousal or parental policy that is equivalent to the current student insurance. Each AHC student should carry insurance information at all times on clinical and community educational rotations to have available in emergency situations.

Written documentation is needed with a nurse or doctor's signature (include the clinic site). **Details are available on the web** <http://www.bhs.umn.edu/services/AHC.htm#AHC>

Long-Term Academic Schedule

Fall 2006	Spring 2007	May Session 2007	Summer 2007
Courses: MedT 1010 Orientation to Medical Technology	Courses:	Courses:	Courses:
Programs:	Programs:	Programs:	Programs:
Fall 2007	Spring 2008	May Session 2008	Summer 2008
Courses:	Courses:	Courses:	Courses:
Programs:	Programs:	Programs:	Programs: