This is the General Information, and Programs and Services sections of the 1997-1999 University of Minnesota Institute of Technology Bulletin.
University of Minnesota Mission Statement

The University of Minnesota, founded in the belief that all people are enriched by understanding, is dedicated to the advancement of learning and the search for truth; to the sharing of this knowledge through education for a diverse community; and to the application of this knowledge to benefit the people of the state, the nation, and the world.

The University’s mission, carried out on multiple campuses and throughout the state, is threefold:

- **Research and Discovery**—Generate and preserve knowledge, understanding, and creativity by conducting high-quality research, scholarship, and artistic activity that benefit students, scholars, and communities across the state, the nation, and the world.

- **Teaching and Learning**—Share that knowledge, understanding, and creativity by providing a broad range of educational programs in a strong and diverse community of learners and teachers, and prepare graduate, professional, and undergraduate students, as well as non-degree-seeking students interested in continuing education and lifelong learning, for active roles in a multiracial and multicultural world.

- **Outreach and Public Service**—Extend, apply, and exchange knowledge between the University and society by applying scholarly expertise to community problems, by helping organizations and individuals respond to their changing environments, and by making the knowledge and resources created and preserved at the University accessible to the citizens of the state, the nation, and the world.

In all of its activities, the University strives to sustain an open exchange of ideas 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 systems and institutions, and with communities to achieve common goals; and that inspires, sets high expectations for, and empowers the individuals within its community.

Publications

As an Institute of Technology (IT) student, you are responsible for all information in this bulletin that is pertinent to your undergraduate study and to your particular field. In addition, you should be aware of information in the following sources:

- **Class Schedule**—This quarterly publication lists day school courses complete with hours, rooms, instructors, and prerequisites, as well as registration instructions, examination fees, maps, final exam schedules, grading definitions, and other valuable information.

- **Course Guide**—The *Course Guide*, a quarterly publication distributed at the University Bookstores, provides course information in addition to college bulletins and the *Class Schedule*.

- **Other Bulletins**—Evening and summer courses are featured in the *University College Evening Classes Bulletin* and *Summer Session Bulletin*, respectively. Bulletins are also published for other University colleges. Most can be obtained at 240 Williamson Hall or by calling (612) 625-2008.

- **Student Publications**—Two publications are produced by students in the Institute of Technology: *IT Connection* (newsletter) and *IT Technolog* (technical magazine). The IT Board of Publications selects editors and business managers and directs the overall policy of the publications. Students are encouraged to participate as staff members of the various publications.

Policies

- **Bulletin Use**—The University of Minnesota will change to a semester-based academic calendar beginning academic year 1999-2000. This bulletin is the last quarter-based bulletin
that will be produced for the Institute of Technology. It covers academic years 1997-98 and 1998-99. Information about semester-based academic programs will be provided in the fall of 1998 in semester-transition publications.

The information in this bulletin and other University bulletins, publications, or announcements is subject to change without notice. University offices can provide current information about possible changes.

This publication is available in alternative formats upon request. Please contact the Office of Admissions, University of Minnesota, 240 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455 (612/625-2008; e-mail admissions@tc.umn.edu).

This bulletin also is available in electronic format on the Internet and may be accessed on the World Wide Web at http://www.umn.edu/commpub/.

Equal Opportunity—The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

In adhering to this policy, the University abides by the Minnesota Human Rights Act, Minnesota Statute Ch. 363; by the Federal Civil Rights Act, 42 U.S.C. 2000e; by the requirements of Title IX of the Education Amendments of 1972; by Sections 503 and 504 of the Rehabilitation Act of 1973; by the Americans With Disabilities Act of 1990; by Executive Order 11246, as amended; by 38 U.S.C. 2012, the Vietnam Era Veterans Readjustment Assistance Act of 1972, as amended; and by other applicable statutes and regulations relating to equality of opportunity.

Inquiries regarding compliance may be directed to Stephanie Lieberman, Director, Office of Equal Opportunity and Affirmative Action, University of Minnesota, 419 Morrill Hall, 100 Church Street S.E., Minneapolis, MN 55455 (612/624-9547).

Access to Student Educational Records—In accordance with regents’ policy on access to student records, information about a student generally may not be released to a third party without the student’s permission. (Exceptions under the law include state and federal educational and financial aid institutions.) The policy also permits students to review their educational records and to challenge the contents of those records.

Some student information—name, address, electronic (e-mail) address, telephone number, dates of enrollment and enrollment status (full time, part time, not enrolled, withdrawn and date of withdrawal), college and class, major, adviser, academic awards and honors received, and degrees earned—is considered public or directory information. Students may prevent the release of public information. To do so, they must notify the records office on their campus.

Students have the right to review their educational records. The regents’ policy is available for review at 150 Williamson Hall, Minneapolis, and at records offices on other campuses of the University. Questions may be directed to the Office of the Registrar, 150 Williamson Hall (612/625-5333).

Immunization—Students born after 1956 who take more than one University class are required under Minnesota law to submit an Immunization Record form.

The form, which is sent along with the official University admission letter, must be filled out and returned to Boynton Health Service within 45 days of the first term of enrollment in order for students to continue registering for classes at the University. Complete instructions accompany the form.

Extracurricular Events—No extracurricular events requiring student participation may be scheduled from the beginning of study day to the end of finals week. Exceptions to this policy may be granted by the Senate Committee on Educational Policy. The Senate advises all faculty that any exemption granted pursuant to this policy shall be honored and that students who are unable to complete course requirements during finals week shall be provided an alternative and timely opportunity to do so.

Smoke-Free Campus Policy—Smoking is prohibited in all facilities of the University of Minnesota, Twin Cities campus except for designated private residence hall rooms.
Department Offices

(area code 612)

Office of the Dean, 105 Walter Library ................................................................. 624-2006
Office of the Associate Dean for Student Affairs, 106 Lind Hall ...................... 624-5091
Advising Office for Lower Division Programs, 128 Lind Hall .......................... 624-2890
Student Affairs Office, 105 Lind Hall ................................................................. 624-8504
Center for the Development of Technological Leadership, 107 Lind Hall ........ 624-5747
IT Honors Office, 136 Lind Hall ......................................................................... 625-2800
IT Career Services, 50 Lind Hall ........................................................................ 626-4090
Academic Program for Excellence in Engineering and Science (APEXES), 339 Walter Library ................................................................. 626-0219
Aerospace Engineering and Mechanics, 107 Akerman Hall ............................ 625-8000
Astronomy, 356 Tate Laboratory of Physics ....................................................... 624-0211
Biosystems and Agricultural Engineering, 213 Biosystems and Agricultural Engineering Building, St. Paul ................................. 625-7733
Chemical Engineering and Materials Science, 151 Amundson Hall .............. 625-1313
Chemistry, 139 Smith Hall .................................................................................. 624-6000
Civil Engineering, 122 Civil Engineering Building ........................................... 625-5522
Computer Science, 4-192 EE/CSci ................................................................... 625-4002
Electrical Engineering, 4-174 EE/CSci ............................................................... 625-3300
Geology and Geophysics (Earth Sciences), 108 Pillsbury Hall ....................... 624-1333
Mathematics, 4 Vincent Hall ............................................................................. 625-4848
Mechanical Engineering, 125 Mechanical Engineering .................................. 625-0705
Physics, 148 Tate Laboratory of Physics ............................................................ 624-7375
Statistics, 270 Vincent Hall ............................................................................... 625-8046

Other Helpful Offices

Office of Admissions, 240 Williamson Hall ......................................................... 625-2008
Asian/Pacific American Learning Resource Center, 306 Walter Library ........ 624-2317
University Counseling and Consulting Services, 109 Eddy Hall ..................... 624-3323
University College Evening Classes Registration, 101 Wesbrook Hall .......... 625-3333
University College Counseling, 314 Nolte Center ......................................... 625-2500
Office of Scholarships and Financial Aid, 210 Fraser Hall .............................. 624-1665
Housing & Residential Life, Comstock Hall—East ........................................... 624-2994
International Student Adviser’s Office, 20 Nicholson Hall ............................ 626-7100
Office of the Registrar Service Center, 150 Williamson Hall ......................... 625-5333
University Information ....................................................................................... 625-5000 (off campus)
............................................................................................................................... Dial 0 (on campus)
For more than a century, the Institute of Technology (IT) has provided education, research, and technology transfer in science and engineering. With 4,500 students enrolled in its undergraduate programs, 2,000 in graduate programs, and 400 faculty, IT’s 11 departments and schools and 15 research centers are committed to excellence in all that they undertake.

**Degrees Offered**

**Undergraduate Degrees**—Each of IT’s undergraduate programs provides a rigorous and stimulating education that is enhanced by close interaction with distinguished research faculty and access to IT’s research facilities.

Sixteen degrees are offered:

- bachelor of aerospace engineering and mechanics
- bachelor of science in astrophysics
- bachelor of biosystems and agricultural engineering
- bachelor of chemical engineering
- bachelor of science in chemistry
- bachelor of civil engineering
- bachelor of science in computer science
- bachelor of electrical engineering
- bachelor of geological engineering
- bachelor of science in geology
- bachelor of science in geophysics
- bachelor of materials science and engineering
- bachelor of science in mathematics
- bachelor of mechanical engineering
- bachelor of science in physics
- bachelor of science in statistics

**Graduate Degrees**—The University of Minnesota is the only institution in the state that offers a full range of graduate programs in mathematics and computer science, the physical sciences, and engineering. Each IT department offers M.S. and Ph.D. degree programs in several areas within its discipline. For detailed information about the various graduate programs, consult the *Graduate School Bulletin*.

IT and the Graduate School jointly offer a program leading to the master of engineering (M.E.) degree in any of the engineering disciplines. This program provides advanced preparation in specialized design work for recent graduates in engineering as well as for working engineers who wish to improve their technical capabilities.

The management of technology program is an executive-format graduate program that prepares working engineers and scientists for careers in technology management. It is a part-time, two-year program leading to a master of science degree in the management of technology (MS-MOT). For more information, contact the Center for the Development of Technological Leadership, 107 Lind Hall, 207 Church Street S.E., Minneapolis, MN 55455 (612/624-5747).

**Special Programs**

**Interdisciplinary Programs**—IT students can plan interdisciplinary programs tailored to their specific interests. Although a degree is conferred by a single department, students can combine coursework from several departments.

Many interdisciplinary programs are possible. A few examples include acoustics, bioengineering, environmental engineering, nuclear engineering, and transportation. Students should contact their department office or visit 105 Lind Hall for more information.

**Honors Program**—The IT honors program provides special educational experiences to those students who have the ability and motivation to accept an extra challenge. Honors opportunities include a specially designed academic curriculum during the freshman and sophomore years, upper division programs leading to the *cum laude* degrees, close contact with instructors, opportunities for research, and a variety of elective honors courses, seminars, and colloquia offered in IT and the College of Liberal Arts.

During the freshman year, most lower division honors students take enriched mathematics, physics, and chemistry courses that provide excellent preparation for any IT major. Students also participate in the many social and other cocurricular activities initiated by the IT Student Honors Group.

This special lower division academic program continues into the sophomore year offering enough flexibility so students can take the courses they need to pursue any major. For the junior and senior years, each department offers its own upper division honors program consisting of courses, research projects, and honors opportunities leading to the *cum laude* degrees.

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1. Program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).
Admission to the Lower Division Program—
Most lower division honors students begin their participation in the honors program in the fall of the freshman year. These students apply and are admitted in their senior year of high school. Selection is based on academic accomplishments in high school, scores on standardized tests, an application essay, and a recommendation usually from a teacher or counselor. The priority application deadline for freshman admission is January 15. Applications may be obtained by contacting the Office of Admissions, 240 Williamson Hall (612/625-2008).

Students with excellent grades in regular courses during the fall of their freshman year may apply to enter the honors program for winter quarter. These students should have taken the appropriate first-quarter mathematics and physics courses so they are prepared for the corresponding honors sequences.

Admission to Upper Division Programs—
Students about to enter their junior year may apply to the upper division honors program administered through their major department. Admission requirements are set by the individual departments and may be obtained from the department or the IT Honors Office. Previous enrollment in the lower division honors program is not required for participation in upper division honors programs.

Graduation With Honors—Enrollment in the upper division honors program is required for graduation with the honors designations cum laude, magna cum laude, and summa cum laude. Other graduation criteria include University of Minnesota residence (see page 20), quality of the grade record, participation in honors opportunities, fulfillment of requirements designated in the major field, and, for summa cum laude, an honors thesis. Some departments also require theses for cum laude and magna cum laude degrees.

IT Honors Office—This office provides academic advising, procedural information, and other college office services to honors students. The address is University of Minnesota, 136 Lind Hall, 207 Church Street S.E., Minneapolis, MN 55455 (612/625-2800).

Paid Learning Opportunities—IT Career Services (ITCS) provides information about off-campus employment related to major or career interests. Many options are available for part-time, summer internship, and cooperative education employment. Students may be eligible for part-time or summer internship opportunities as early as the end of their freshman year. Students entering upper division may be eligible to participate in cooperative education programs offered through their major department. For more information, contact ITCS, 50 Lind Hall (612/624-4090).

Premedical Programs—Because there is no prescribed premedical major, some students plan their IT programs as preparation for medical school. The Minnesota medical schools, at Duluth, Minneapolis, and Rochester, give strong preference to applicants who are state residents.

The admissions committee for the Minneapolis campus Medical School has approved the following courses to fulfill its premedical requirements:

- Biol 1009 plus 5 cr in biology, zoology, or genetics (10 cr)
- Chem 1051-1052, 3100, 3101, 3301, 3302, 5126 (25 cr)
- Comp 1011 and literature (12 cr)
- Math 1251-1252—mathematics through calculus (8 cr)
- Phys 1104-1105-1106-1107-1108-1109, or 1251-1252-1253 (12-15 cr)
- At least 27 cr, evaluated on A-F grading, in humanities, social science, foreign language, or other liberal arts areas (literature and humanities recommended)

Students considering careers in medical research or academic medicine should complete additional electives in these fields beyond the basic requirements listed above. Although reading knowledge of a foreign language is not an admission requirement, it is recommended for students interested in medical research or postdoctoral study in medicine.

The Pre-Health Science Library, 30 Johnston Hall, contains bulletins for all U.S. and Canadian medical schools as well as career information about medical and paramedical fields.

For details on application procedures, students should consult the premedical adviser in their IT department.
Academic Program for Excellence in Engineering and Science (APEXES) (formerly Project Technology Power/PROMISE) — APEXES promotes academic excellence and the increased presence of underrepresented groups (African American, Chicano/Latino, Native American) in engineering and the physical sciences. Through its precollege, undergraduate, and graduate/faculty programs, it promotes diversity in the classroom, laboratory, and workplace to prepare IT students for careers in an ethnically diverse work force.

Working with other IT and University offices, the program offers a variety of academic enrichment programs such as tutoring, learning assessment, career assessment, and study groups. Through collaboration with IT departments and corporate sponsors, APEXES identifies experiences outside the classroom such as internships, cooperative programs, and work teams to expose students to applications in science and engineering. These collaborations also provide merit scholarships for underrepresented students in engineering and the physical sciences who excel academically.

For more information, contact APEXES, 339 Walter Library, 117 Pleasant Street S.E., Minneapolis, MN 55455 (612/626-0219; e-mail APEXES@tc.umn.edu).

Reserve Officers Training Corps — Qualified students may combine work toward an IT degree with participation in an ROTC program. The Departments of Military Science (Army ROTC), Naval Science (Navy/Marine ROTC), and Aerospace Studies (Air Force ROTC) each offer two-, three-, and four-year programs. Participating students, upon completion of the program, receive a commission as an officer in their respective service. ROTC curricula provide instruction and practice in leadership and management skills as well as military and related subjects. Various scholarship programs are available, ranging from tax-free monthly allowances to four-, three-, and two-year scholarships that cover all tuition, books, and fees. The military technical degree requirements give IT students priority for scholarships. Interested students should consult the Army-Navy-Air Force ROTC Bulletin or inquire at the following offices in the Armory Building on the Minneapolis campus: Army ROTC, Room 108, 612/624-7300 (collect); Navy/Marine, Room 203, 612/625-6677; and Air Force ROTC, Room 3, 612/624-2884.

Study Abroad — IT students have a number of opportunities for study abroad. Study in English is possible at several sites. Opportunities include ISEP (International Student Exchange Program) and IAESTE (International Association for the Exchange of Students for Technical Experience).

Identifying Study Abroad Opportunities — The Study Abroad Catalog describes the broad range of opportunities for University of Minnesota students to study in another country as part of their degree program. Students can learn more about these options through an advising appointment at the International Study and Travel Center (ISTC), 102 Nicholson Hall (612/625-1150).

Study Abroad Opportunities in Engineering — The University’s student exchanges and consortium memberships give students access to engineering courses at universities in many countries. Courses taught in English are available in Australia, Canada, Finland, Malta, Singapore, Sweden, Tanzania, and the United Kingdom. Students with sufficient language fluency may instead choose to study in Chinese (Hong Kong), Filipino (Philippines), Finnish (Finland), French (Belgium, France), German (Germany), Italian (Italy), Korean (South Korea), Portuguese (Brazil), Spanish (Argentina, Colombia, Costa Rica, Dominican Republic, Mexico), or Thai (Thailand). The range of opportunities is even greater for math or science majors.

Other Study Abroad Opportunities — Science and engineering students need not necessarily seek credit in their major. Study abroad is encouraged for language acquisition, cultural learning, or practical field experience. The resulting credits can often be used as electives. A broad range of intensive short-term language programs, area studies programs (which offer courses on the culture, society, and language of the host country), and field study programs (which include group programs, individual research programs, and internships) are
available. These programs are sponsored by the University or other institutions. Contact ISTC for more information.

**Credit for Study Abroad**—Advance planning and IT endorsement are essential to ensure that credit from study abroad fits smoothly into the student’s degree program. A student who enrolls in a University of Minnesota program will receive procedural information from the sponsoring office on campus. Those who select any other option should make an advising appointment at the Foreign Studies Program office (104 Nicholson Hall, 612/624-4525) to discuss credit procedures and obtain a Foreign Study Checklist. Through the Checklist, appropriate IT faculty or advisers will record their instructions and agreements concerning credit. The Checklist also helps maintain the student’s enrollment status and financial aid eligibility while abroad.

**Financial Aid**—For nearly all study programs students can arrange to retain their eligibility to receive financial aid through the University and defer past loans. Additional financial aid is available for some programs. Contact ISTC for more information.

**Program for Women**—IT’s Program for Women supports women in their pursuit of science and engineering education and careers. Services are provided to women undergraduate and graduate students, transfer and nontraditional students, faculty, technical staff, fellows, and precollege girls.

The program recruits talented women in an attempt to increase the enrollment of women in IT degree programs to levels above national trends. It builds networks for IT women, provides skills and tools for success, and works to improve the climate for women in individual departments. Its outreach efforts focus on encouraging girls to explore and enjoy mathematics and science as well as educating parents, teachers, leaders, and the greater community on their critical roles in supporting girls and women in science and engineering. The program also provides student referral, scholarship and fellowship files, a resource library, networking information, MN-WISE electronic list server, and advocacy.

**Center for the Development of Technological Leadership (CDTL)**—IT, the Carlson School of Management, College of Liberal Arts, Hubert H. Humphrey Institute of Public Affairs, and College of Agricultural, Food, and Environmental Sciences participate in this interdisciplinary center. It promotes leadership in technology by supporting appropriate research and providing IT students and technical professionals with educational opportunities for increased breadth and depth in technical management, business, and liberal arts. The center administers two undergraduate programs, management minor (see below) and IDEAS (see page 16), and the master of science in the management of technology degree program (see page 6).

**Management Minor**—This program is for IT undergraduates who wish to broaden their education by taking management courses. The program trains future engineers and scientists in accounting, operations and management sciences, finance, and marketing. Courses are taught by Carlson School of Management faculty. For applications, contact CDTL, 107 Lind Hall (612/624-5747).

**Computer Facilities**

The Institute of Technology, in cooperation with Computer and Information Services, has established a number of computer laboratories for students. These laboratories allow interactive computing, using either stand-alone computers and workstations or remote access to central computing facilities, including those of the Minnesota Supercomputer Center. Laboratories are available to IT students at any time during the working day and during some evening and weekend hours.

Students also have access through their departments to many special-purpose machines, ranging from small tabletop units for data reduction in laboratories to larger models reserved for special projects.

The Department of Computer Science offers a series of courses in FORTRAN, C, and C++. Discipline-related computing courses are offered in some departments.

In addition, full-time students, faculty, and staff can purchase microcomputers, software,
and peripheral equipment at a significant discount through the University. Information on the microcomputer discount program is available at Computer and Information Services, 125 Shepherd Labs.

The University Libraries’ card catalog, catalogs at many other institutions, and many databases are available through the campus computer network.

Electronic mail accounts are established for all students.

Admission

Prospective Student Advising—If you wish to discuss your individual situation, you may arrange an interview with an admissions counselor in the Office of Admissions, 240 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455-0213 (612/625-2008). When you come for an interview, please bring transcripts of high school and/or college work, test results, and any other information pertinent to the interview. To schedule a campus visit with a tour, call the Office of Admissions VISITLINE (612/625-0000, 800/752-1000 toll free in continental United States; e-mail admissions@tc.umn.edu; http://admissions.tc.umn.edu/ on the World Wide Web).

Adult Special Admission—Persons interested in completing individual courses or groups of courses to meet their own needs, rather than to pursue degree programs, may be admitted as adult special students. Applicants must usually have a bachelor’s degree and meet criteria similar to that required of advanced standing students. Although adult special students are not considered degree candidates, they may subsequently begin degree work when recommended by the departments in which they have studied. In such cases, credit earned as an adult special student is accepted as degree credit when appropriate.

Students seeking adult special admission should apply to the Office of Admissions. Applications should be turned in early; the deadline is the first day of class.

International Student Admission—Students applying to IT who are or will be on a student visa are considered for fall, winter, and spring quarters. Applicants must apply by April 1 (priority deadline) or June 1 (final deadline) for fall quarter, October 15 for winter quarter, and January 15 for spring quarter. Selection is based on the student’s academic record and the availability of space. Applications must include secondary school transcripts in addition to any university-level records. Freshman applicants must meet the course preparation requirements described on page 11.

English Proficiency—If English is not your native language, you may be required to take the Test of English as a Foreign Language (TOEFL) or the Michigan English Language Assessment Battery (MELAB). To register for the TOEFL, contact the agency that handles TOEFL registration in your country or write to the Educational Testing Service (Box 899, Princeton, NJ 08540 USA) at least 10 weeks before any scheduled test date. If you are already in the Twin Cities area, you may register for the MELAB with the Minnesota English Center, 320 16th Ave. S.E., University of Minnesota, 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 (313) 764-2416.

Summer Session—Qualified students, including those from high school, may register for University courses offered in the summer. Students need not apply, but may register as “summer only” students. Information on summer offerings is available from the Summer Session Office, 135 Johnston Hall, 101 Pleasant Street S.E., Minneapolis, MN 55455 (612/624-4000, 888/330-8636 toll free outside the Twin Cities; e-mail summer@mail.cee.umn.edu).

Housing—If you are looking for a place to live, either on or off campus, University Housing & Residential Life can help. Living and Learning on Campus, a booklet describing on-campus residence facilities and containing an application for campus residence halls, is available in January. To add your name to the mailing list for this application booklet, contact Housing & Residential Life by the end of January.

Housing & Residential Life is in Comstock Hall–East, 210 Delaware Street S.E., Minneapolis, MN 55455 (612/624-2994).
Freshman Admission

The Office of Admissions reviews all applications to determine applicants’ potential for academic success. This review process falls into two categories: automatic admission or admission by individual review in which freshman applicants whose records do not meet automatic admission requirements are evaluated through the Office of Admissions’ individual review process. If you do not meet criteria for automatic admission, you should still apply.

Criteria for Automatic Admission—You will be automatically admitted to IT as a freshman if you:

1. Submit your complete application, including all test scores and transcripts, with a $25 application fee before the freshman class fills (ACT preferred, SAT accepted; applying early in your senior year in high school strongly recommended)

2. Complete the following high school course preparation requirements:
   - Four years of English—with emphasis on writing, including instruction in reading and speaking skills and in literary understanding and interpretation. (If you are not a native speaker of English and 1) you have an ACT English score of 17 or lower or 2) took English as a second language in high school, then you will have to submit scores from the Michigan English Language Battery [MELAB]. Call the Office of Admissions for details.)
   - Four years of mathematics—including elementary algebra, geometry in two and three dimensions, intermediate algebra, and trigonometry
   - Three years of science—including one year each of biological science, chemistry, and physics
   - Two years of a single second language
   - Two years of social studies—including U.S. history

3. Admission decisions are based on grades in high school English, mathematics, and science and on the aptitude rating (AAR) calculated as follows:

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\text{AAR} = \frac{\text{High school rank percentile} + 2 \times \text{the ACT (American College Test program) composite standard score}}{100}
\]

\[
\text{SAR} = \frac{\text{High school rank percentile} + 0.1 \times \text{the SAT (Scholastic Aptitude Test) verbal score} + 0.1 \times \text{the SAT mathematics score}}{100}
\]

An AAR of 130 or better, or SAR of 185 or better, guarantees admission. If your AAR or SAR are below the automatic admission cutoffs, your application will qualify for the Office of Admissions’ individual review process.

Admission by Individual Review—Review considerations may be based on one or more of the following:

1. A pattern of steady improvement in academic performance
2. A strong college preparatory curriculum (including advanced placement) or a particularly challenging pattern of coursework
3. The size of the applicant’s high school graduating class
4. Extenuating circumstances that have adversely affected the applicant’s academic record or test scores
5. Evidence of exceptional achievement or aptitude not reflected in the applicant’s academic record or pre-admission test scores
6. Evidence of exceptional talent or ability in artistic, scholarly, leadership, or athletic performance

Evaluation of College Coursework—No college coursework is required for freshman admission. However, applicants who have completed any transferable college work should have a grade point average (GPA) of at least 2.70 in transferable credits (in addition to meeting criteria 1-3 above) to qualify for automatic admission. Applications of students with GPAs of less than 2.70 will be individually reviewed.

Admission to Other University of Minnesota, Twin Cities Colleges—Applicants who are not admitted to IT may be considered for admission to a freshman-admitting college that matches their needs, backgrounds, interests, and abilities. The other freshman-admitting colleges on the Twin Cities campus are the Colleges of Liberal Arts; Agricultural, Food, and Environmental Sciences; Human Ecology; Natural Resources; and General College. Students who satisfactorily complete
prerequisite work in one of these colleges may apply for admission to IT at a later time. For admission requirements of other colleges, see the appropriate college bulletins.

**Appeals**—Any student who believes that the circumstances concerning their application need further consideration may submit a written appeal to the Office of Admissions.

**Residence**—Because the University is a state institution, Minnesota residents pay lower tuition than nonresidents and, in many programs, receive priority consideration for admission. To qualify for resident status, students must reside in Minnesota for at least one calendar year before the first day of class attendance. For more information, contact the Resident Classification and Reciprocity Office, 240 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455 (612/625-6330), or the residency office on your campus.

**Reciprocity**—The University has reciprocity agreements with North Dakota, South Dakota, Wisconsin, and Manitoba. The University also participates in a reciprocity program with Kansas, Michigan, Missouri, and Nebraska, for students in the following undergraduate colleges: Agricultural, Food, and Environmental Sciences; Architecture and Landscape Architecture; Biological Sciences; Education and Human Development; Human Ecology; Liberal Arts; Natural Resources; Carlson School of Management; Division of Dental Hygiene; School of Nursing; and Institute of Technology. If you are a resident of any of these states or this province, you may qualify for reciprocity tuition rates, which are lower than nonresident tuition rates and, in some cases, comparable to resident rates. For more information, contact the Resident Classification and Reciprocity Office, 240 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455 (612/625-6330), or the residency office on your campus.

**Tuition Deposit**—Admitted freshmen must submit a nonrefundable $50 tuition deposit, to be applied to first quarter’s tuition. The tuition deposit deadlines are May 1 for fall quarter and November 1 for winter quarter. As an admitted freshman, you must pay the deposit by the deadline or within two weeks after the date on your admission notification letter (whichever is later). If you do not submit the deposit by the deadline, the admission will be rescinded.

**Beginning at Other University Colleges**—Freshmen may begin in any college at the Twin Cities, Morris, or Duluth campuses. Transfer into the upper division of the Institute of Technology is automatic provided the first two years of coursework were completed at the University and the same grade point was achieved as that required of students beginning in the Institute of Technology. An Application for Change of Status or College is used to change campus and to apply for the upper division. (See Upper Division under Scholastic Policies.) This program is open to qualified resident and nonresident applicants.

**Early Admission**—Outstanding high school students who have not yet graduated may be admitted to the University, but must be sufficiently mature to adjust to University life and work. Personal interviews, comprehensive testing, and letters of recommendation from high school officials and parents are required. **High School Specials** are students who enroll for courses while completing high school work. For an admission application, contact the Office of Advanced High School Student Services, 107 Armory, 15 Church Street S.E., Minneapolis, MN 55455 (612/626-1666). **Early Admits** are outstanding students who have not completed high school yet enter the University as full-time degree-seeking students; normally, they do not receive a high school diploma.

**Upper Division Admission**—Students entering as freshmen or sophomores must apply for admission to the upper division (junior and senior years). New freshmen and sophomores are told upon admission and at orientation what GPA might be required for entry into their desired upper division major field. (See Upper Division under Scholastic Policies for procedure.)

**Admission Without a Designated Major**—Students who want to keep their options open and learn about IT fields before selecting a specific major should indicate “IT Undecided” on the application for admission. They receive advising from the Office of Lower Division Programs until they are admitted to upper division. During that period students are given the opportunity to use the
many resources available in that department to learn about IT fields. Some of the services include mentors; peer, faculty, industry, and alumni advisers; special courses; and written materials. These special programs provide information about career opportunities in IT’s various fields and other colleges and help students avoid the mistake of selecting a major for the wrong reasons.

All students are urged to take advantage of the very beneficial Industry Adviser and Mentor Programs, through which they can visit selected industries to talk and learn about engineering and science fields with an engineer and/or scientist of their choice. Currently, more than 200 engineers and scientists from Honeywell, 3M, and NSP serve as advisers to IT students through this program. Arrangements to participate are made in 128 Lind Hall.

IT undecided students follow the same first-year academic program as that followed by IT students with a specified major. (A listing of the requirements common to all IT basic lower division curricula is found in the second section of this bulletin.)

Advanced Placement is sponsored by the College Entrance Examination Board in certain high schools. Awards for the Institute of Technology are:

<table>
<thead>
<tr>
<th>Area/Test</th>
<th>Score</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art History</td>
<td>3,4,5</td>
<td>4 cr Art 1002 (Introduction to the History of Art)</td>
</tr>
<tr>
<td>Biology</td>
<td>3,4,5</td>
<td>5 cr Biol 1201 (Evolutionary and Ecological Perspectives) and 5 cr Biol 1009 (General Biology); counts toward biological science/lab requirement</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3,4,5</td>
<td>8 cr Chem 1051, 1052 (General Principles of Chemistry); counts toward physical science/lab requirement</td>
</tr>
<tr>
<td>Classics/Latin</td>
<td></td>
<td>5 cr Lat 3105 (Latin Poetry: Catullus and Ovid)</td>
</tr>
<tr>
<td>Latin Literature</td>
<td>3,4,5</td>
<td>5 cr Lat 3106 (Latin Poetry: Virgil)</td>
</tr>
<tr>
<td>Computer Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>3,4,5</td>
<td>4 cr CSci 3001 (Perspectives on Computers in Society)</td>
</tr>
<tr>
<td>AB</td>
<td>4,5</td>
<td>4 cr CSci 3102 (Introduction to Programming)</td>
</tr>
<tr>
<td>Economics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro</td>
<td>3,4,5</td>
<td>4 cr Econ 1101 (Principles of Microeconomics); counts toward social science requirement</td>
</tr>
<tr>
<td>Macro</td>
<td>3,4,5</td>
<td>5 cr Econ 1102 (Principles of Macroeconomics); counts toward social science requirement</td>
</tr>
<tr>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language/Comp</td>
<td>3,4,5</td>
<td>5 cr Comp 1011</td>
</tr>
<tr>
<td>Lit/Comp</td>
<td>3,4,5</td>
<td>5 cr Comp 1011; 4 cr Engl 1999; counts toward literature requirement</td>
</tr>
<tr>
<td>French Literature</td>
<td>3,4,5</td>
<td>5 cr Fren 3099; counts toward the literature requirement</td>
</tr>
<tr>
<td>Gov't and Politics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American</td>
<td>3,4,5</td>
<td>5 cr Pol 1001; counts toward social science requirement</td>
</tr>
<tr>
<td>Comparative</td>
<td>3,4,5</td>
<td>4 cr Pol 1054; counts toward social science requirement and international perspectives requirement</td>
</tr>
<tr>
<td>History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American</td>
<td>3,4,5</td>
<td>8 cr Hist 1999; counts toward historical perspectives and cultural diversity requirements</td>
</tr>
<tr>
<td>European</td>
<td>3,4,5</td>
<td>8 cr Hist 1999; counts toward historical perspectives and international perspectives requirement</td>
</tr>
<tr>
<td>Math</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculus AB</td>
<td>3,4</td>
<td>4 cr Math 1251 (Calculus I); counts toward mathematical thinking requirement</td>
</tr>
<tr>
<td>Calculus BC</td>
<td>5</td>
<td>8 cr Math 1251, 1252 (Calculus I-II); mathematical thinking</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>4 cr Math 1251 (Calculus I); mathematical thinking</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>8 cr Math 1251, 1252 (Calculus I-II); mathematical thinking</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>12 cr Math 1251, 1252, 1261 (Calculus I-II-III); mathematical thinking</td>
</tr>
<tr>
<td>Music</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music Theory</td>
<td>3,4,5</td>
<td>4 cr Mus 1001 (Fundamentals of Music)</td>
</tr>
<tr>
<td>Music Listening and Literature</td>
<td>3,4,5</td>
<td>4 cr Mus 1021 (Introduction to Music); counts toward visual and performing arts requirement and international perspectives requirement</td>
</tr>
<tr>
<td>Physics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>3,4,5</td>
<td>(CLA and architecture) 5 cr Phys 1041 and 5 cr 1042 (Introductory Physics); counts toward physical science/lab requirement</td>
</tr>
<tr>
<td>C</td>
<td>3,4,5</td>
<td>8 cr Phys 1251, 1252 (General Physics); counts toward physical science/lab requirement</td>
</tr>
<tr>
<td>Psychology</td>
<td>3,4,5</td>
<td>5 cr Psy 1001; counts toward social sciences requirement</td>
</tr>
<tr>
<td>Spanish Literature</td>
<td>3,4,5</td>
<td>5 cr Span 3099; counts toward literature requirement</td>
</tr>
</tbody>
</table>

1 Students will be granted course credit plus credits toward fulfillment of the University’s liberal education requirements for graduation.

2 Course numbers 1999 and 3099 indicate blanket credit in the subject matter area at the freshman-sophomore and junior-senior levels respectively; other numbers are those of specific courses for which students may be granted credit.

Note: Students may be awarded credit in a second language by taking a proficiency examination. Call (612) 624-6811. Art students may present a portfolio to the Department of Art. Call (612) 625-8096.
International Baccalaureate (IB) awards, available in a number of secondary schools in Canada and the United States, are made as follows:

<table>
<thead>
<tr>
<th>Higher-level subject</th>
<th>Grade</th>
<th>Credit award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Design</td>
<td>5-7</td>
<td>4 cr ArtS 1401</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 cr ArtS 1999</td>
</tr>
<tr>
<td>Biology</td>
<td>5-7</td>
<td>5 cr Biol 1201</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 cr Biol 1009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 cr Biol 1999</td>
</tr>
<tr>
<td>Chemistry</td>
<td>5-7</td>
<td>4 cr Chem 1051</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 cr Chem 1052</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 cr Chem 1999</td>
</tr>
<tr>
<td>Economics</td>
<td>5-7</td>
<td>4 cr Econ 1101</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 cr Econ 1102</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 cr Econ 1999</td>
</tr>
<tr>
<td>English A</td>
<td>5-7</td>
<td>7 cr Engl 1999 (lit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 cr Comp 1011</td>
</tr>
<tr>
<td>History (American or European)</td>
<td>5-7</td>
<td>12 cr Hist 1999</td>
</tr>
<tr>
<td>Math</td>
<td>5-7</td>
<td>4 cr Math 1251</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 cr Math 1252</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 cr Math 1261</td>
</tr>
<tr>
<td>Physics</td>
<td>5-7</td>
<td>4 cr Phys 1251</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 cr Phys 1252</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 cr Phys 1253</td>
</tr>
<tr>
<td>Other subjects</td>
<td>5-7</td>
<td>12 cr subject (under review, please inquire)</td>
</tr>
</tbody>
</table>

Advanced Standing Admission (Transfer)

Students who have completed a year or more of college work (39 or more quarter credits) are considered for admission with advanced standing. Students planning to transfer to IT should be pursuing a lower division engineering, science, or math program. The mathematics, chemistry, physics, and computer science courses required for the preferred major should be mostly completed at the time of application. Admission decisions are based on the overall GPA and grades in science and mathematics. Because demand for some IT programs exceeds available places, applicants are asked to indicate three majors in order of preference. Applications must include recent transcripts from all colleges attended, reflecting all college work attempted (whether satisfactorily completed or not). Applications must also include a high school transcript to show whether the preparation requirements listed on page 11 have been met.

Applicants must apply by April 1 (priority deadline) or June 1 (final deadline) for fall quarter, October 15 for winter quarter, and January 15 for spring quarter.

Most courses transfer routinely. Equivalency for technical courses has been established between IT and most colleges and universities. Technical courses in which a grade of D has been earned do not transfer, unless the following course in the sequence was completed with a grade of C or better.

Dual Degree (3/2) Programs—The Institute of Technology has cooperative agreements with a number of selected public and private colleges. These programs support those who want to combine a strong liberal arts background with study in engineering—and who are willing to spend another year or two achieving this goal.

Under one plan a student can complete three years of study at a private college and then transfer to IT for two additional years. At the private college, core college requirements and the pre-engineering core courses in math and science are completed. A bachelor’s degree will be awarded by both the private college and IT.

The second plan requires completion of a bachelor of arts degree in math or science before coming to the University to work toward a master of science degree in engineering. This typically involves completing some undergraduate engineering coursework. This plan minimizes the amount of undergraduate coursework required. The amount of such coursework will vary by department and area of study. Participating colleges include: (in Minnesota) Augsburg College, Bethel College, Gustavus Adolphus College, Hamline University, Macalester College, Moorhead State University, Northwestern College, the College of St. Catherine, St. John’s University-College of St. Benedict, University of St. Thomas; (outside Minnesota) Augustana College, SD; Jackson State University, MS; Luther College, IA; North Central College, IL; North Park College, IL; Whittier College, CA.

Planning to Transfer?

Minnesota’s public colleges and universities are working to make transfer easier. You can help if you PLAN AHEAD, ASK QUESTIONS, and USE PATHWAYS created by transfer agreements.
Preparing for Transfer

If you are currently enrolled in a college or university:

• Discuss your plans with the campus transfer specialist in the Student Affairs Office, 105 Lind Hall.

• Call or visit your intended transfer college. You should obtain the following materials and information:
  — college catalog
  — transfer brochure
  — information on admissions criteria and on materials required for admission (e.g., portfolio, transcripts, test scores). Note that some majors have limited enrollments or their own special requirements such as a higher GPA.
  — information on financial aid (how to apply and by what date)

• After you have reviewed these materials, make an appointment to talk with an adviser/counselor in the college or program you want to enter. Be sure to ask about course transfer and admission criteria.

If you are not currently enrolled in a college or university, you might begin by meeting with a transfer specialist or an admission officer at your intended transfer college to plan the steps you need to take.

Understanding How Transfer of Credit Works

• The receiving college or university decides what credits transfer and whether those credits meet its degree requirements. The accreditation of both your sending and your receiving institution can affect the transfer of the credits you earn.

• Institutions accept credits from courses and programs like those they offer. They look for similarity in course goals, content, and level. “Like” transfers to “like.”

• Not everything that transfers will help you graduate. Baccalaureate degree programs usually count credits in three categories: general education, major/minor courses and prerequisites, and electives. The key question is, “Will your credits fulfill requirements of the degree or program you choose?”

• If you change your career goal or major, you might not be able to complete all degree requirements within the usual number of graduation credits.

Applying for Transfer Admission

• Application for admission is always the first step in transferring. Fill out the application as early as you can prior to the deadline. Enclose the application fee.

• Request that official transcripts be sent from every institution you have attended. You might be required to provide a high school transcript or GED test scores as well.

• Recheck to be certain you supplied the college or university with all the necessary paperwork. Most colleges make no decisions until all required documents are in your file.

• If you have heard nothing from your intended college of transfer after one month, call to check on the status of your application.

• After the college notifies you that you have been accepted for admission, your transcripted credits will be evaluated for transfer. A written evaluation should tell you which courses transfer and which do not. How your courses specifically meet degree requirements may not be decided until you arrive for orientation or have chosen a major.

• If you have questions about your evaluation, call the Office of Admissions and ask to speak with a credit evaluator. Ask why judgments were made about specific courses. Many concerns can be cleared up if you understand why decisions were made. If not satisfied, you can appeal. See “Your Rights as a Transfer Student” below.

Your Rights as a Transfer Student

• A clear, understandable statement of an institution’s transfer policy.

• A fair credit review and an explanation of why credits were or were not accepted.

• A copy of the formal appeals process.

  Usual appeals steps are: 1) Student fills out an appeals form. Supplemental information you provide to reviewers—a syllabus, course description, or reading list—can help.
  2) Department or committee will review.
3) Student receives, in writing, the outcome of the appeal. 4) Student can appeal decision to Ben Sharpe, 105 Lind Hall.

- At your request, a review of your eligibility for financial aid or scholarships.

For help with your transfer questions or problems, see your campus transfer specialist.

### Financial Aid

The University offers three general types of financial aid to undergraduates: scholarships and grants, student loans, and college work-study. A student employment service to help students find jobs is also available. For more information, contact the Office of Scholarships and Financial Aid, University of Minnesota, 210 Fraser Hall, 106 Pleasant Street S.E., Minneapolis, MN 55455 (612/624-1665), and the Student Employment Center, 170 Donhowe Building (612/624-8070).

Various IT research facilities offer part-time research and other job opportunities for qualified undergraduate and graduate students. Because a complete listing of facilities and positions is not possible, students should contact individual departments for more information.

Entering freshmen are eligible to apply for the Undergraduate Assistant Scholarship Program, which entails a $2,000 award and involvement with a faculty member on a research project. The program gives students exposure to the research effort of their particular department and brings them into close contact with outstanding professors. Students must apply before January 15 of their senior year in high school. For more information, call (612) 625-2800.

International students do not qualify for financial aid.

### IDEAS (Integrated Degrees in Engineering, Arts, and Sciences)—The Center for the Development of Technological Leadership (CDTL) offers this scholarship program for undergraduates who integrate degrees from IT and the College of Liberal Arts. IDEAS enriches students’ education by exploring how technology and society influence each other and promotes leadership in technology by providing students with educational opportunities for increased breadth and depth in liberal arts, business, and management. For more information, contact CDTL, 107 Lind Hall (612/624-5747).

### Student Services

#### Student Affairs Office

Prospective and current students can discuss any questions or problems with a member of the advising staff in the student affairs office, 105 Lind Hall (612/624-8504). This office is administratively responsible for admission, orientation, registration, scholastic conduct, institute-wide scholarships, degree requirements and procedures, and related functions. Appointments are encouraged.

#### University Counseling and Consulting Services

University Counseling and Consulting Services (UCCS), 109 Eddy Hall on the East Bank and 199 Coffey Hall on the St. Paul campus (612/624-3323 for both), offers counseling for academic, career, personal, or relationship concerns. Besides counseling, UCCS features a variety of services. The Career Development Center and the Learning and Academic Skills Center offer workshops, courses, and materials for career development or academic skills improvement. The Organizational Development Program offers consultation, assessment, team building, conflict mediation, training, and workshops. UCCS’s Office of Measurement Services (OMS) scores exams, surveys, and research instruments and provides consultation to University faculty and staff. OMS operates the Minnesota Statewide Testing Program for Minnesota elementary and secondary schools. The Testing Center administers admissions, placement, and national tests. For more information, see http://ucsl.ucs.umn.edu/uccswwww/uccs.html on the World Wide Web.

### Academic Advising

Academic advising is a crucial component of the University’s educational mission. Although the approach to advising varies among the different colleges and departments, these general principles apply:

- Academic advising is available to prospective and currently enrolled students.
- Academic advising addresses students’ needs in coursework, program planning, career options, and development issues.
- Faculty, professional advisers, and peers are involved in academic advising.
University academic advisers participate in an Academic Advising Network—a forum for sharing information and expertise across colleges and departments. Expect academic advisers at all levels to assist you in designing and implementing a program of study and related activities that will allow you to achieve your educational goals. Advisers expect you to prepare for program planning sessions by giving careful thought to possible course selections, program schedules, and short- and long-term education and career goals, and to come to appointments with pertinent academic records and materials.

Advisers—Advising for freshmen is coordinated by the Office of Lower Division Programs, 128 Lind Hall (612/624-2890). Every IT freshman is assigned to a team of approximately 100 students. During orientation, freshmen meet with their advisers and plan their fall schedule. Students on each team take one or more courses in common. This encourages the formation of study and support groups. Freshmen must meet with an adviser at least once each term to discuss their progress and plan their schedule for the following quarter.

All lower division students obtain advising through the Office of Lower Division Programs until admission to upper division.

Tutorial Assistance—IT provides peer tutorial assistance for students in chemistry, mathematics, physics, and other IT courses. These teaching assistants, selected from junior and senior IT students, are trained, qualified, and willing to assist students one-on-one with problems in IT lower division courses. Tutorial assistance is provided in various locations—in 150 Lind Hall, by appointment in 128 Lind Hall, and in all residence halls. Mathematics graduate teaching assistants are available in 150 Lind Hall with the undergraduate teaching assistants. In addition, graduate teaching assistants provide tutorial service for computer science courses in offices near the Instructional Lab, 4-204 Electrical Engineering/Computer Science Building.

For more information about tutorial programs, contact the Office of Lower Division Programs, 128 Lind Hall (612/624-2890).

IT Career Services (ITCS)—This office, 50 Lind Hall (612/624-4090), provides comprehensive career planning and job search assistance for IT students and alumni. ITCS helps students explore major and career options. Each quarter the office offers IoT 1312, a two-credit career exploration course that identifies how interests, skills, and abilities align with career possibilities, and provides the opportunity to meet professionals working in engineering and science fields.

ITCS provides a variety of services to students seeking part-time jobs, summer internship and cooperative program positions, or permanent jobs after graduation. ITCS hosts on-campus interviewing, posts job opportunities, and helps students learn all aspects of the job search process, including writing résumés and job search correspondence, developing interviewing skills, and learning how to access job and employer information.

The office also supplies information about and applications for the Engineer In Training (EIT) examinations.

Students are encouraged to register with ITCS as early as their sophomore year.

Disability Services—The University’s mission is to provide optimal educational opportunities for all students, including those with physical, sensory, learning, and/or psychological disabilities. The University recognizes that disabled students sometimes have unique needs that must be met for them to have access to campus programs and facilities. In general, University policy calls for accommodations to be made on an individualized and flexible basis. It is the responsibility of students to seek assistance at the University and to make their needs known. One of the first places to seek assistance is Disability Services (DS). This office is provided by the University to promote program and physical access, which means ensuring the rights of disabled students and assisting the University in meeting its obligations under federal and state statutes. DS provides direct assistance such as information, referral, advocacy, support, and academic accommodations (e.g., interpreters, readers, tutors) for enrolled and prospective students, as well as consultation to faculty and staff to ensure access to their programs and facilities. The office will also assist disabled students in obtaining services from other University or community resources. Educational
specialists are available to assist students with learning disabilities and sensory impairments; counselors provide services to students with physical and/or psychological disabilities as well as serve as a liaison between the University and the Division of Rehabilitation Services. Campus accessibility guides are available and address such issues as building accessibility, handicapped parking, curb cuts, elevator locations, and accessible buses. For more information, contact Disability Services, 30 Nicholson Hall, 216 Pillsbury Drive S.E., Minneapolis, MN 55455 (612/626-1333, voice or TTY).

Grading Policy

1. This policy is effective fall quarter 1997 for the Crookston, Morris, and Twin Cities campuses, replacing all previous grading policies. It may not be applied retroactively to any grades or symbols awarded before that time.

2. The University has two grading systems, A-B-C-D-F (with pluses and minuses) and S-N. Students may receive grades only from the grading system under which they have registered for a course.

   In addition, there are registration symbols that do not carry grade points or credit.

3. Instructors must clearly define for a class, at one of its earliest meetings, the performance necessary to earn each grade or symbol.

4. No student may receive a bachelor’s degree unless at least 75 percent of the degree-qualifying residence credits carry grades of A, B, C, or D (with or without pluses or minuses). Each campus, college, and department may choose not to accept academic work receiving a D (with or without a plus or minus).

   Each campus, college, and department determines to what extent and under what conditions each grading system is used, may specify what courses or proportion of courses must be on one system or the other, and may limit a course to either system.

5. When both grading systems are available, students must choose one when registering for a course. The choice may not be changed after the end of the second week of classes (the first week in summer terms).

6. The University’s official transcript, the chronological record of the student’s enrollment and academic performance, is released by the University only at the student’s request or in accord with state or federal statutes; mailed copies have the University’s official seal printed on them. Students may obtain an unofficial transcript, except when they have a transcript hold on their record.

7. The University calculates for each student, both at the end of each grading period and cumulatively, a grade point average (GPA), the ratio of grade points earned divided by the number of credits earned with grades of A-F (including pluses and minuses). Both the periodic and cumulative GPA appear on each student’s record.

8. When a student repeats a course, all grades for the course appear on the transcript, the course credits may not be counted more than once toward degree and program requirements, and only the last enrollment for the course counts in the student’s GPA.

9. Students may petition the college scholastic committee or other appropriate body about this policy.

10. The following grades (with grade points as indicated) and symbols are used on transcripts.

    | Grade | Grade Points | Description |
    |-------|-------------|-------------|
    | A     | 4.00        | Represents achievement that is outstanding relative to the level necessary to meet course requirements. |
    | A-    | 3.67        | |
    | B+    | 3.33        | |
    | B     | 3.00        | Represents achievement that is significantly above the level necessary to meet course requirements. |
    | B-    | 2.67        | |
    | C+    | 2.33        | |
    | C     | 2.00        | Represents achievement that meets the course requirements in every respect. |
    | C-    | 1.67        | |
    | D+    | 1.33        | |
    | D     | 1.00        | Represents achievement that is worthy of credit even though it falls fully to meet the course requirements. |
    | S     |             | Represents achievement that is satisfactory (equivalent to a 2.00 or higher and meets or exceeds course requirements in every respect). The S does not carry grade points and is not included in GPA calculations, but the credits count toward the student’s degree program if allowed by the department. |
    | F or N|             | Represents failure or no credit and indicates that coursework was completed but at an achievement level unworthy of credit, or was not completed and there was no agreement between the instructor and student that the student would be awarded an F or N for the course. The F carries 0.00 grade points and is included in GPA calculations; the N does not carry grade points and is not included in GPA calculations. |
I .......... Incomplete, a temporary grade that indicates coursework has not been completed. The instructor assigns an I when, due to extraordinary circumstances, the student was prevented from completing coursework on time. An I requires a written agreement between the instructor and student specifying the time and manner in which the student will complete the course requirements during the student’s next term of enrollment. For undergraduates and adult special students, work to make up an I must be submitted within 72 hours of the last final examination of the student’s next term of enrollment; if not submitted by that time, in the sixth week of the next term the I will automatically change to an F (if A-F registration) or N (if S-N registration).

The instructor is expected to turn in the new grade within four weeks of the date work is submitted. When an I is changed to another symbol, the I is removed from the record. Once an I has become an F or N, it may be converted to any other grade by petition of the instructor (or department if the instructor is unavailable).

K .......... Indicates the course is still in progress and a grade cannot be assigned at the present time.

T .......... Transfer, a prefix to the original grade that indicates credits transferred from another institution or from one University college or campus to another.

V .......... Visitor, indicates registration as an auditor or visitor; does not carry credit or grade points.

W .......... Withdrawal, indicates a student has officially withdrawn from a course. If a student withdraws from a course during the first two weeks of classes, that course registration is not recorded on the student’s transcript. The W is recorded if the student withdraws from the course during the third through sixth week of class (second or third weeks of summer terms). Withdrawal in the seventh or later week of classes (fourth or later in summer terms) requires college approval. Each student may, once during his or her undergraduate enrollment, withdraw from a course without college approval, and receive a W, at any time up to and including the last day of class for that course.

X .......... Indicates a student may continue in a sequence course in which a grade cannot be determined until the full sequence of courses is completed. The instructor submits a grade for each X when the student completes the sequence.

Scholastic Policies

Special Examinations for Credit—Students who believe their knowledge of a subject is equal to that required to complete a particular course may request to take an examination for credit. Once approved in 105 Lind Hall, arrangements can be made with the appropriate department to take an examination. A $30 fee is assessed for each examination. Only currently enrolled students are eligible. Credit by special examination is not granted for language courses taken in high school.

Continuation in Sequences—IT students taking the following lower division sequence courses must earn a grade of at least C each quarter to continue in the sequence:

Chem 1051-1052, 3100-3101
Chem 3301/3305, 3302/3306
EE 3009
Geo 1001, 1002
Math 1151, 1251-1252-1261
Math 1551H-1552H-1553H
Phys 1251-1252-1253
Phys 1254P-3512-3513

IT students must earn a grade of C or better in all 1xxx and 3xxx math, physics, and chemistry courses.

Upper Division—The upper division corresponds to the junior and senior year.

Freshmen and sophomores must apply for entry and are told at orientation what minimum GPA might be required. That GPA is calculated using the grades of all courses taken, including repeated courses. Students should file an application in 105 Lind Hall before completing their sophomore year.

Academic Difficulty: Probation and Drop Status—See your adviser regularly especially if you are having difficulty in any of your courses. IT’s mechanism for dealing with academic difficulty is called academic probation.

There are three levels of probation: academic warning, probation contract, and suspension. A student is placed on academic warning (P1) if his/her quarterly or cumulative GPA is less than 2.00 but 1.50 or better. A lower division student on academic warning must see an adviser in order to register and is issued a hold release to register at the normal queued time. An upper division student receives a letter but no record hold. If a student’s quarterly and cumulative GPAs at the end of the probationary quarter are 2.00, the student is removed from academic warning. If not, the student is placed on probation contract (P2).

A student is also placed on probation contract if his/her quarterly or cumulative GPA is less than 1.50. A student on probation contract must complete a specific contract (E-100) for academic performance and is not allowed to register for subsequent quarters until grades for

\textsuperscript{1} A minimum grade of C in EE 3009 is required for admission to EE 3010.
\textsuperscript{2} To continue in additional mathematics courses (in particular Math 3251 or Math 3261) or sequences, an IT student must earn a minimum grade of C in Math 1261.
\textsuperscript{3} To continue in physics sequences, an IT student must earn a minimum grade of C in Phys 1254.
the probationary quarter are received. If E-100 goals are met and quarterly and cumulative GPAs are at least 2.00, the student is removed from probation. If an E-100 is not used, the student is held to the minimum college requirement of grades of C in each course. If goals/requirements are not met, the student is placed on suspension (P3).

A student who is suspended may appeal the suspension. A determination of readmittance will be made jointly by the Student Affairs Office and the student’s major department. Readmission is not automatic; to be readmitted, a student must show evidence of changes in circumstance that make it more likely that the student will succeed in the academic program.

**Appeal Procedure**—Go to the Student Affairs Office, 105 Lind Hall, and complete a Scholastic Drop Appeal. Attach a transcript and other supporting material. You will be notified of the decision by mail.

**Suspension Status**—A suspended student may not reenter day school classes or take IT evening classes through University College unless granted permission by the Student Affairs Office and the department Scholastic Standards Committee.

**Repeating Courses**—IT students are allowed to repeat courses in which they received a grade of D or less, and only the last grade earned is then used in computing their GPA and honor point deficiency. IT students are not allowed to repeat courses in which they received a grade of C or better.

**ROTC Courses**—Grades received in all ROTC courses are entered on the student’s transcript and are counted in the GPA calculation.

**Changing Majors**—To change majors within IT, students must petition requesting such a change. Forms are available in 105 Lind Hall. A transcript must accompany the petition.

Students who graduate from IT but continue to register for classes will automatically have their major changed to adult special (nondegree) unless they had previously been admitted to a second (double) major.

To change majors from IT to another college unit or campus within the University, students must apply for transfer through the Office of the Registrar Service Center, 150 Williamson Hall, as far as possible in advance of the projected transfer. Some units have transfer application deadlines. Students must meet transfer admission requirements of the unit they plan to enter.

**Residency Requirement**—A student earning a bachelor’s degree must complete 45 credits after admission to IT, of which at least 30 credits must be completed in the senior year.

**Dean’s List**—Students whose quarterly GPA is 3.75 or better qualify for the Dean’s List. Students must complete at least 12 credits A-F to be eligible.

**Graduation**—The bachelor’s degree with professional designation will be recommended for students who have been formally admitted to the department from which she or he wishes to graduate, who earn a GPA of 2.00 or better, and who have completed all of the required work and the total number of credits specified for their curriculum. Students should file an Application for Degree at the Office of the Registrar Service Center, 150 Williamson Hall, about a year before graduation.

Students with a GPA of 3.50 or better in their undergraduate work are granted their degree “with distinction.” Students with a GPA of 3.80 or better in their undergraduate work are granted their degree “with high distinction.”

**Conduct and Discipline**

The Institute of Technology assumes that all students who enroll in its programs are serious about their education and expects them to be responsible individuals who demand of themselves high standards of honesty and good personal conduct.

The Institute of Technology expects the highest standards of honesty and integrity in the academic performance of its students. Any act of scholastic dishonesty is regarded as a serious offense, which may result in expulsion. The Institute of Technology defines scholastic dishonesty as submission of false records of academic achievement; cheating on assignments or examinations; plagiarizing; altering, forging, or misusing a University academic record; taking, acquiring, or using test materials without faculty permission; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors,
awards, or professional endorsement. Aiding and abetting a student in an act of scholastic dishonesty is also considered a serious offense.

The IT Student Conduct Committee, composed of faculty and students, hears cases of scholastic dishonesty. When charges are upheld, the student may be placed on disciplinary probation, failed in a course, suspended, or expelled.

A student has the right to a hearing and to appeal any disciplinary action. Copies of the procedures for cases of scholastic dishonesty are available in 105 Lind Hall upon request.

Disciplinary cases that are nonacademic in nature or that involve two or more colleges are referred to the Campus Committee on Student Behavior (612/624-6073).

If a student’s infraction involves both IT judicial proceedings and court proceedings, and if an IT decision might prejudice the court case, IT will hold its decision in abeyance until the court proceedings have been concluded.

**Grievances**

Students with complaints about academic policies have recourse through well-established grievance procedures. They are expected to confer first with the course instructor. If no satisfactory solution is reached, the complaint should be presented to the department, school, or program head. If these informal processes fail to reach a satisfactory resolution, the department’s grievance committee will hear the evidence.

Advisers in 105 Lind Hall are competent sources for interpreting college procedures or regulations and can often suggest suitable alternatives when a problem is involved. Copies of the *Student Academic Grievance Policy* are also available in 105 Lind Hall.

**Student Activities**

Scientists and engineers find that membership in technical or professional societies usually helps their career development. Many of these societies have student chapters at the University. Through them students have the opportunity to participate in activities of the parent society, to gain experience in conducting technical meetings, and to meet senior members of the societies. In addition, regular membership in the society is facilitated upon graduation, and any entrance fee is reduced or waived for former student members.

**Professional Societies**—Branches of the following national professional societies are maintained at the University of Minnesota by students and faculty: American Chemical Society, American Institute of Chemical Engineers, Society of Physics Students, American Society of Civil Engineers, American Society of Mechanical Engineers, American Society of Agricultural Engineers, American Institute of Aeronautics and Astronautics, American Institute of Industrial Engineers, and Institute of Electrical and Electronic Engineers. Additional professional societies include the Society of Women Engineers and Triangle.

**Honorary Scholastic Societies**—The honorary scholastic societies in IT promote the high standards of the engineering profession by conferring memberships, awards, and other honors on undergraduates distinguished for scholastic achievement and for character. These societies normally elect members from the junior and senior classes on the basis of scholarship (as measured by class rank) and character (as judged by peers and faculty). Of these honorary societies, only Tau Beta Pi selects its members from students in all undergraduate departments of the Institute of Technology. The others confine their membership to students from a single department: Alpha Epsilon (Agricultural Engineering), Chi Epsilon (Civil Engineering), Eta Kappa Nu and Kappa Eta Kappa (Electrical Engineering), Pi Tau Sigma (Mechanical Engineering), and Sigma Gamma Tau (Aerospace Engineering and Mechanics).

**Plumb Bob**—Plumb Bob, a senior honorary leadership and service society, works to create and maintain a spirit of fellowship and cooperation among IT students and further the interests of IT and the University. Its members are chosen for their character, leadership, and service.

**IT Student Board**—The IT Student Board is the executive body of the students in the Institute of Technology. It represents students in matters affecting the general interests of IT and the University.
Professional Registration

Registration as an engineer is a legal requirement for certain kinds of practice. A professional license is required before an individual may use the designation of engineer in any legal connection. Many engineers obtain a license to show their support for the concept of a legal recognition of the professional standing of the engineer. Many also obtain a license because professional registration may be useful or required in future employment.

The license is awarded in most states to those graduates of an accredited engineering curriculum who have passed examinations in the fundamentals, principles, and practice of engineering and who have demonstrated their competence by a specified number of years of appropriate experience. The fundamentals of engineering examination covers materials studied in undergraduate curricula. This examination is given in the spring and fall of every year and may be taken by students in their senior year. More information and applications may be obtained from 50 Lind Hall or by writing to the Minnesota State Board of Architecture, Engineering, Land Surveying, Landscape Architecture and Interior Design, 133 7th Street East, St. Paul, MN 55101-2333 (612/296-2388).

UNITE Instructional Television—About 50 credit courses each quarter are offered through UNITE (University-Industry Television for Education), an instructional television system for continuing education at the employee’s workplace. These include both upper division and graduate courses as well as specially developed courses and seminars. Classes are held in specially equipped TV studio classrooms with on-campus students in attendance. The system is interactive, enabling students at all sites to talk with the instructor and to take part in class discussions. Participating companies help support the system through payment of a fee based on the number of credits for which its employees are enrolled. This fee is separate from tuition, which is paid either by the student or the company, depending on company policy.

For more information, contact the Director, UNITE Instructional Television, 114 Lind Hall, 207 Church Street S.E., Minneapolis, MN 55455 (612/624-2332).