Notice

After publication of this student handbook and the 2002-2003 Undergraduate Catalog, the university governance and administrative processes may create changes in the academic calendar, admission and graduation requirements, academic programs, course offerings, regulations, staff, and tuition and fee charges. Such changes take precedence over handbook and catalog statements. While reasonable efforts will be made to publicize such changes, a student is encouraged to seek current information from appropriate offices, because responsibility for complying with all applicable requirements ultimately rests with the student.

Although the university attempts to accommodate the course requests of students, course offerings may be limited by financial, space, and staffing considerations, or may otherwise be unavailable. Many undergraduate students in the College of Engineering and Engineering Technology choose to take less courses per semester than set forth in this handbook, or may not initially meet course prerequisites. Nothing in this handbook and the Undergraduate Catalog may be construed to promise or guarantee registration in any course or course of study (whether required or elective), nor may anything be construed to promise or guarantee the completion of an academic program within a specified length of time.

References

Northern Illinois University, 2002-2003 Undergraduate Catalog

Schedule of Classes booklet issued every summer/fall (combined) and spring term during the 2002-2003 academic year


Northern Illinois University, 2002-2003 Student Handbook

Northern Illinois University is an equal opportunity institution and does not discriminate on the basis of race, color, religion, sex, age, marital status, national origin, disability, or status as a disabled or Vietnam-Era Veteran. The Constitution and Bylaws of Northern Illinois University afford equal treatment regardless of political views or affiliation, and sexual orientation.
Welcome Majors

The College of Engineering and Engineering Technology welcomes you to the 2002-2003 academic year. We are sure that your academic stay at Northern Illinois University will provide some challenges and rewarding experiences to you.

This student handbook has been developed as a convenient reference for advising and therefore contains information on requirements for an undergraduate degree in a major in the College of Engineering and Engineering Technology. The primary reference for the material contained in this handbook is Northern Illinois University’s 2002-2003 Undergraduate Catalog. You are advised to read the pertinent areas of the Undergraduate Catalog to obtain an in-depth knowledge of the requirements for your undergraduate degree. You are ultimately responsible for reading the information in this booklet and the Undergraduate Catalog to fulfill all graduation requirements accordingly.

We feel that advising is an important component of the baccalaureate experience in the College of Engineering and Engineering Technology. Plan on meeting with your faculty adviser each semester in order to discuss the next semester’s enrollment and career plans.

The Office of the Associate Dean handles all undergraduate academic affairs. Please feel free to contact this office in room 331 of the Engineering Building, DeKalb campus or call (815) 753-1442 if you have any questions or need assistance.

Best wishes for a successful academic experience.
Established in 1985, the College of Engineering and Engineering Technology is the newest college at NIU. The college shares the university’s commitment to the transmission, expansion, and application of knowledge through teaching, research, and public service. The college has strong commitments to students, the general public, community colleges, and industry, and offers undergraduate and graduate programs in engineering and technology fields applicable to the region’s current and potential industrial mix. To foster the professional growth of its students, the college supports and encourages social, cultural, and professional activities of the student chapters of national engineering and technology professional societies. The college has 48 faculty members and approximately 1,500 undergraduate and graduate students.

The college has four departments: Electrical Engineering, Industrial Engineering, Mechanical Engineering, and Technology (Electrical Engineering Technology, Manufacturing Engineering Technology, and Industrial Technology). All departments offer undergraduate Bachelor of Science (B.S.) and graduate Master of Science (M.S.) degrees. The undergraduate programs in electrical engineering, industrial engineering, and mechanical engineering are accredited by the Accreditation Board for Engineering and Technology (ABET). The Engineering Technology programs (Electrical Engineering Technology and Manufacturing Engineering Technology) are developed as appropriate according to ABET criteria and the Industrial Technology program is accredited by the National Association of Industrial Technology (NAIT).

Students intending to major in Electrical Engineering, Industrial Engineering, Mechanical Engineering, or Technology are directly admitted to these majors upon their admission to the university. The Nuclear Engineering Technology program is a restricted-admission program. The Nuclear Engineering Technology alternative is available only to employees of electric power companies who have, or are completing, the United States Nuclear Regulatory Commission’s Reactor Operator Licensure training.
Facilities

In addition to the main Engineering Building, the College of Engineering and Engineering Technology has two other locations on campus. The Office of the Dean, the Associate Dean, and the Departments of Electrical Engineering, Industrial Engineering, and Mechanical Engineering are located in the Engineering Building on Garden Road. The administrative and faculty offices, classrooms, and laboratories for the Department of Technology are housed in Still Hall and Still Gym (on the corner of Gilbert Drive and College Avenue).

Northern’s Engineering Building includes over 29 laboratories for electrical, industrial, and mechanical engineering students including a computer center; a “clean room” for a state-of-the-art microelectronics laboratory; a flexible manufacturing systems laboratory for “just-in-time” processing; a subsonic wind tunnel and advanced thermofluids laboratories. The Engineering Building is located on the northeast corner of the DeKalb campus.

Several computer systems such as Hewlett-Packard, SUN Microsystems, and Pentium Personal Computer stations are available to students for course work and research. In addition, the college has direct access to NIU’s Amdahl mainframe system and national supercomputer centers. The on-going academic and research programs are supported by a number of modern laboratories within the college. Some of the labs are:

- Acoustic Signal Processing Lab (electrical engineering)
- Automated Manufacturing Lab (technology)
- CAD/CAM Lab (mechanical engineering)
- Communications Lab (electrical engineering)
- Computer Engineering Lab (electrical engineering)
- Controls and Robotics Lab (electrical engineering)
- Dynamic Systems and Controls Lab (mechanical engineering)
- Electrical Engineering Technology Lab (technology)
- Electro dynamics Lab (electrical engineering)
- Ergonomics Lab (industrial engineering)
- Fluids and Hydraulics Lab (technology)
- Heat/Mass Transfer & Robotics Lab (mechanical engineering)
- Integrated Circuit Design Lab (electrical engineering)
- Laser Measurement & Image Processing Lab (mechanical engineering)
- Manufacturing Machining Lab (technology)
- Manufacturing Lab (industrial engineering)
- Materials Lab (mechanical engineering)
- Measurement and Control Lab (industrial engineering)
- Metrology Lab (technology)
- Microelectronics Fabrication & Characterization Lab (electrical engineering)
- Operations Research Lab (industrial engineering)
- Plastics Technology Lab (technology)
- RF Development Lab (electrical engineering)
- Robotics and Intelligent Systems Lab (electrical engineering)
- Senior Design Lab (electrical engineering)
- Solid Mechanics Lab (mechanical engineering)
- Thermal Fluids Lab (mechanical engineering)
- Undergrad Circuit Design/Analysis Lab (electrical engineering)
- Welding Technology Lab (technology)
- W9NIU/amateur radio station (electrical engineering)

Visit our webpage at www.ceet.niu.edu for a detailed lab tour
The Department of Technology offers a baccalaureate degree completion program for students from Northern Illinois who hold an Associate of Applied Science (A.A.S.) Degree. The B.S. in Industrial Technology is offered at NIU’s Rockford Education Center and Elgin Community College. These programs are designed to broaden a student’s education into the field of industrial supervision, preparing them for management positions. Most students pursue this program part-time, thus classes are held during the evening and sometimes on Saturdays at various instructional centers. All off-campus courses in this program are taught by regular and adjunct faculty from the Department of Technology.

The box to the right contains the capstone courses offered at the off-campus sites. However, there are additional “selected” classes offered that are not listed here.

Prospective students must seek admission through NIU’s Admission’s Office in the same manner as all other prospective students. However in addition to the standard evaluation of credits, their transcripts will be reviewed by the Department of Technology for additional credit for courses in technology which do not match NIU courses directly. Once admitted, students can register via NIU’s telephone registration systems (TRACS) or WebCONNECT registration, their official academic records will be maintained by the NIU’s Office of Registration and Records, and their financial records will be maintained by NIU’s Bursar Office.
Distance Learning

Northern Illinois University students can take NIU courses at additional locations via the video conferencing system. These opportunities are made possible through NIU’s membership in the West Suburban Higher Education Consortium and the Fox Valley Educational Alliance. NIU’s Distance Learning sites regularly in use include Hoffman Estates, NIU Rockford Education Center, NIU Naperville, the College of DuPage in Glen Ellyn, Elgin Community College, Sauk Valley Community College in Dixon, Highland Community College in Freeport, and the Multi-University Center in Oakbrook.

Classes are taught live from a video conferencing classroom and sent to other sites via the videoconferencing system. These interactive classes offer two-way video and audio instruction. Students can see their instructor, and classroom lectures and discussions take place as in any college class. A delivery system is in place to move course materials between the students and instructors. No additional fees are charged for videoconferencing classes.

In addition to video conferencing systems, online education is the latest medium for delivery of courses. In order to meet the demand for NIU courses, and to address the public need for accessible education, the Division of Continuing Education at NIU has created NIU Online (www.niuonline.niu.edu) to facilitate the development and offering of online courses.

Community College Transfer Guidelines (2+2+)

The College of Engineering and Engineering Technology welcomes transfer students from Illinois community colleges. Students find it easy to continue their studies at NIU if they plan well. Therefore, following CEET transfer guidelines while completing an Associate’s Degree is highly recommended. However, students should always work closely with their community college advisor.

To date, 9 transfer guidelines have been developed. These guidelines are published on the college webpage at www.ceet.niu.edu.

The guidelines cover the following subjects:
- General description of the engineering discipline
- Description of the degree program at CEET
- Suggested classes to take for at the community college
- (There is a limit of 66 semester hours of transfer credit)
- Explanation of general education sequence requirements to satisfy ABET requirements
- Remaining classes to take for 2+ years at CEET
- Contact information at CEET and the community college

College of DuPage
(Glen Ellyn, IL)
Elgin Community College
(Elgin, IL)
William Rainey Harper College (Palatine, IL)
Kishwaukee Community College (Malta, IL)
McHenry County College (Crystal Lake, IL)
Moraine Valley Community College (Palos Hills, IL)
Oakton Community College (Des Plaines, IL)
Rock Valley College (Rockford, IL)
Waubonsee Community College (Sugar Grove, IL)
College Administration

Dean
Dr. Romualdas Kasuba
321 Engineering Building
(815) 753-1281
FAX (815) 753-1310

Associate Dean
Dr. Promod Vohra
331 Engineering Building
(815) 753-1442
FAX (815) 753-0362

External Programming Director
Dr. Deborah Brue
318 Engineering Building
(815) 753-6902
FAX (815) 753-4203

Chairman Mechanical Engineering
Dr. Shin-Min Song
226 Engineering Building
(815) 753-9979
FAX (815) 753-0416

Chairman Technology
Dr. Clifford Mirman
203 Still Gym
(815) 753-1349
FAX (815) 753-3702

Chairman Electrical Engineering
Dr. Sen-Maw Kuo
(not-pictured)
330 Engineering Building
(815) 753-9974
FAX (815) 753-1289

Chairman Industrial Engineering
Dr. Nouredine Boubekri
(not-pictured)
230 Engineering Building
(815) 753-1269
FAX (815) 753-0823
Office of the Associate Dean

The Office of the Associate Dean is responsible for undergraduate academic matters including curriculum, student records, admissions, orientation, and special advising needs. All academic forms requiring college approval must be submitted to this office. All important dates and events are posted on the college’s electronic message board. Students also are advised to consult the Schedule of Classes booklet to obtain more information on important dates, final exams, class schedules etc. Some of the forms/requests which may be obtained from the Associate Dean’s Office are the following:

- Course/University Withdrawal forms
- Overload Petition
- Approval for Late Schedule Update (late add/drop)
- Concurrent Registration (enrollment) Request at another university or community college
- Senior Transfer Credit Request
- Petition to Waive University Graduation Requirements
- Permission for Third Enrollment/repeat of a course
- Petition to Change Credit Type (regular grading/pass fail)
- Adjustment or Substitution of Transfer Course Work (e.g., substitution of a transfer course for a NIU course)
- Substitution/Waiver of Major/Minor Requirements (e.g., substitution of a NIU course for a required NIU course)
- Trade Off of Transfer Credit

Student Advising and Faculty Advisers

Each student in the College of Engineering and Engineering Technology is assigned a faculty adviser upon enrollment in the university. The faculty adviser helps the student select the appropriate courses for registration every semester and guides the student’s overall academic goals. During the fall and spring semesters, advising periods are concurrent with TRACS Registration Timetables.

Engineering and technology majors must make appointments directly with their assigned faculty adviser during the advising periods to discuss future enrollment and career plans.

Each semester, all engineering majors are required to have their next semester schedule reviewed, approved, and signed by their faculty adviser. In addition, all general education courses in the humanities, arts, and social sciences must be approved by a faculty adviser. Any deviation from an approved course schedule may delay graduation. Engineering majors are required to obtain adviser approval on appropriate advising forms each semester. The student keeps one copy of each approved form and one copy remains in the student file.
Students are advised to consult the Undergraduate Catalog for specific requirements regarding the pass/fail option. The pass/fail option cannot be used for the following courses:

- Courses taken to satisfy a university or ABET general education requirement.
- Courses required for the major program, both from within the major department and from outside the major department.
- Courses required for the minor, both from within the minor department and from outside the minor department.

At the end of each semester, the Office of Registration and Records ranks all students in the College of Engineering and Engineering Technology by class. All students who have a term and cumulative GPA of 3.5 or higher will be placed on the Dean’s List for the college and receive a certificate in recognition of their scholastic achievement for that semester.

The college’s engineering and technology student organizations volunteer a large amount of time towards free tutoring relating to engineering and technology courses.

Each semester, the College of Engineering and Engineering Technology provides, at no cost to the student, tutors for mathematics (MATH 110, MATH 155, MATH 210, MATH 229, MATH 230, MATH 232), physics (PHYS 250, PHYS 251, PHYS 250A, PHYS 251A), computer science (CSCI 240), and English courses (ENGL 103, ENGL 104) plus technical writing projects required in upper division engineering and technology courses. Enrolled students interested in tutorial help are advised to contact the Associate Dean’s Office in 331, Engineering Building for further information. The tutoring hours are also posted on the college’s web page & the electronic message board.

The program brings together students with a common interest in engineering and technology in order to provide camaraderie, interaction of ideas, and support for academic achievement and retention. Program activities include formal and informal student/faculty interaction, career-building activities such as industrial speakers and field trips, and organized social events. Assignment to this floor is competitive and applications are available at the main housing office in Neptune East. Currently enrolled students must maintain a minimum cumulative grade point average of 2.30 to return to the floor in subsequent years. Exceptions to this rule may be made by the Associate Dean in unusual circumstances.

For further information about this special housing option for the 2002-2003 academic year, please contact Student Housing and Dining Services for a brochure.

The College of Engineering and Engineering Technology sponsors an academic residential program which is a special residence floor in Douglas Hall, on floors D-3 and D-4. This residential program, on a co-ed quiet lifestyle floor, is designed for freshman, sophomore, junior, and senior students in electrical engineering, industrial engineering, mechanical engineering, and technology.

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For further information about this special housing option for the 2002-2003 academic year, please contact Student Housing and Dining Services for a brochure.
Course Add/Drop

New courses may be added to a student’s schedule during the **first week** of classes of the fall or spring semester. After the first week of classes, students may add a class using the “Approval for Late Schedule Update” form only with the approval of the course department. Courses may only be **dropped** from a student’s schedule during the first week of classes of the fall or spring semester. (The drop period is shorter during the summer term and the summer Schedule of Classes booklet should be consulted.) The Schedule of Classes booklet specifies the exact day which is the **last day** for students to add and drop courses. Courses which are dropped by the published drop deadline do **not** appear on the student’s transcript. After the published drop deadline, course drops require approval of the college (Associate Dean’s Office) and are approved only in exceptional cases.

### Course Withdrawal

After the published drop deadline in the Schedule of Classes booklet, all course load reductions become course **withdrawals** subject to the deadlines discussed in the Undergraduate Catalog and posted in the Schedule of Classes booklet. All course withdrawals do **not** appear on a student’s transcript. The College of Engineering and Engineering Technology enforces all published deadlines. Course withdrawals are processed in the Associate Dean’s Office in room 331 of the Engineering Building. A student may withdraw from a course after the established deadlines only in exceptional cases supported by acceptable evidence of serious illness or other major non-academic personal difficulty. If such approval is given, a “W” will be recorded for the course if the student is passing at the time of withdrawal; if the student is not passing at that time a grade of “F” will be recorded and included in both the term and cumulative GPA. Students who cease to attend a course in which they are enrolled without officially withdrawing will receive an “F” for that course.

The maximum number of hours from which a transfer student may withdraw during pursuit of a baccalaureate degree at NIU is determined by the number of hours of transfer credit accepted at the time of enrollment at Northern Illinois University plus all hours earned at NIU prior to enrollment, see withdrawal hour table.

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<tr>
<th>Withdrawal Hour Table</th>
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<tbody>
<tr>
<td><strong>Transfer Plus Pre-enrollment NIU Hours</strong></td>
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<tr>
<td>1-6</td>
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<td>7-5</td>
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<td>16-30</td>
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<td>31-45</td>
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<td>46 or more</td>
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An undergraduate student who desires to withdraw from the university must obtain a withdrawal form and permission to withdraw from the Associate Dean’s Office in room 331 of the Engineering Building. With such approval, a withdrawal may be made without penalty up to the end of the eight week of the semester. When students officially withdraw from the university after the eighth week of the semester, their grades are recorded as “W” in the courses in which they are passing and as “F” in the courses they are failing at the time they leave the university. Students who withdraw from the university without permission will receive a grade of “F” at the end of the semester in each of the courses for which they are registered.
The procedure and regulations for academic probation and dismissal are stated in the 2002-2003 Undergraduate Catalog. The Academic Policies Committee of the College of Engineering and Engineering Technology reviews the academic records of all students who are eligible for academic dismissal at the end of each fall, spring, and summer term. This committee is chaired by the Associate Dean and its members are the four department chairs or their designees. The committee usually meets on the Thursday following the commencement weekend. All students who are placed on academic probation or who are dismissed from the university for academic reasons at the end of the fall, spring, or summer term are notified by mail by the Associate Dean. Students placed on academic probation are expected to meet with their faculty adviser before their next enrollment to discuss steps to improve their academic performance. Additionally, students on academic probation must attend a group advising meeting held by the Associate Dean’s Office. Documentation of attendance at advising sessions is considered by the college in the review of students eligibility for academic dismissal.

**PATAL: Peer-Assisted Tutoring, Advising and Learning**

Project PATAL’s main purpose is to positively influence the retention of freshmen and sophomores (students who have yet to take engineering and technology courses). Typically, engineering and technology students take foundation courses for the first two years and then in the third year apply that foundation knowledge to engineering and technology courses.

PATAL is designed to simultaneously address the peer advising, learning and tutoring concerns of engineering and technology students. The project utilizes the existing network of student professional associations. Participating peer-students, representing a minimum of six student associations from all 4 departments within the college, provide 20 hours per week of assistance to freshmen and sophomores in foundation and beginning engineering courses. The project covers areas of advising, learning-skills, and tutoring. The peer-students are juniors and seniors that are capable of providing assistance to students at all levels. Additionally, there is a faculty member coordinating and assessing the project.

Since the college already provides tutoring assistance in physics, mathematics and English, project PATAL addresses tutoring needs in engineering and technology courses specifically. As part of project PATAL, exam files, preparational guides, homework examples, and examination/quiz samples are available for 200 level classes, which are often considered difficult by most engineering students. The college has provided for an office for PATAL and has reserved a section in the college library to keep the examination files along with other materials.
Student Chapters of Professional Engineering and Technology Societies

A number of student chapters of professional engineering and technology societies are available on campus for students to join. These student-run chapters often interact with regional chapters of the professional societies. Activities of these organizations include guest speakers from industry, career days, industrial field trips, social get-togethers, and participation in national competition projects. Students are encouraged to join these chapters in order to become more involved with their engineering or technology discipline.

The College of Engineering and Engineering Technology student organizations work very closely with the associate dean’s office in fulfilling the mission of the college. These organizations are very active in mentoring “new entering” students and providing an environment in which they can succeed. Some specific activities of the professional societies include: developing binders for tests and quizzes, recruitment efforts, community service projects, peer tutoring, advising, mentoring, improving industrial relations, enhancing college recognition with the community, and lab renovation.

APM—Alpha Pi Mu (Honor society in industrial engineering)
ASEE—American Society for Engineering Education
ASHRAE—American Society of Heating, Refrigeration, and Air-Conditioning Engineers
ASME—American Society of Mechanical Engineers
ASQC—American Society of Quality Control
ASSE—American Society of Safety Engineers
EPT—Epsilon Pi Tau (honor society in technology)
HKN—Eta Kappa Nu (honor society in electrical engineering)
IEEE—Institute of Electrical and Electronic Engineers
IIE—Institute of Industrial Engineers
IMAPS—International Microelectronics & Packaging Society
NSBE—National Society of Black Engineers
Robotics Club
SAE—Society of Automotive Engineers
SHPE—Society of Hispanic Professional Engineers
SME—Society of Manufacturing Engineers
SPE—Society of Plastic Engineers
SWE—Society of Women Engineers
Triangle Fraternity

2002 SAE Formula Team
The University Honors Program provides a challenging educational experience for students of high academic promise and achievement who have a commitment to excellence. The program permits such students to participate actively in the plan and design of their own educational directions within the overall university and department curricula. Honors courses differ from other courses in that they encourage more open exchange between the student and the professor, both inside and outside the classroom. Students are encouraged to pursue a subject in depth and to develop their own interests through independent study.

The program welcomes not only freshmen but students who wish to enroll in the University Honors Program during or after the freshman year, either from within NIU, as a transfer student, or as graduates of a community college with an associate’s degree (A.A. or A.S.) in a baccalaureate-oriented program.

Honors students enroll in at least one honors course each semester. The freshman and sophomore years include small-enrollment general education courses. Junior and senior honor students can develop their own interests through seminars, independent study, and selected courses. Since all honors credit applies toward graduation requirements, honors students can complete the program without spending additional time working on their degrees. Students who successfully complete the requirements of the Honors Program graduate with special designation on their transcript and diploma.

The departments in the College of Engineering and Engineering Technology offer an honors section of one or more courses each semester which can be used to fulfill the requirements for the Honors Program. Students should consult their department and the Schedule of Classes booklet each term for available honors courses. The “H” suffix after a course number denotes the “Honors” section of that course.

For further information about the University Honors Program, please contact:

University Honors
Campus Life Bldg 110
Northern Illinois University
DeKalb, IL 60115
(815) 753-0694

Center for Access-Ability Resources (CAAR)

A wide range of services at NIU can be obtained by students with disabilities, including housing, transportation, adaptation of printed materials, and advocacy with faculty and staff. Students needing such service or who want more information should contact the CAAR Office directly.

Center for Access-Ability Resources
University Health Services
Northern Illinois University
DeKalb, IL 60115-2879
Telephone: (815) 753-1303
The Cooperative Education/Internship Program provides an opportunity for students to obtain career-related job experience with approved employers during their academic training. Participation in the Cooperative Education/Internship Program requires enrollment in an undergraduate or graduate degree-granting program, career goals related to the type of work experience available through the program, and the approval of the appropriate coordinator. Students may apply for enrollment in the program any time after the completion of their first semester freshman year and prior to the first semester of their senior year. Through this program, students gain first-hand knowledge of their professions, obtain meaningful work experience, and benefit financially from wages earned. This opportunity enables students to better define their areas of interest, helps in their selection of the technical elective courses, and provides a smooth transition from the academic to the work environment upon graduation. Cooperative education assignments may involve at least two semesters (one may be a summer term) between the sophomore or senior years or a one semester assignment as a senior intern.

Engineering students participating in the University’s Cooperative Education/Internship Program do not earn academic credit for their work experience. Technology students may earn credit for an approved departmental internship through the course TECH 409 Internship (3-9). Technology students must obtain prior approval for TECH 409 from the course instructor before enrolling in the course.

Students and companies can use the Cooperative Education Website to register and access information. Students can put their resumes on the web page, view jobs, and request that their resumes go to companies they would like to work for. Companies post their opportunities for all students to access and can query resumes of students and view them on the Internet. This is a great opportunity for all. Currently, there are over 350 companies in Illinois where students have had cooperative education assignments. See website for a complete listing of jobs and companies:

http://www.niu.edu/depts/coop_ed

For further information about the Cooperative Education/Internship Program at NIU, please contact:

Angela Cline, Engineering Coordinator
Cooperative Education/Internship Program
Engineering Bldg 116
Northern Illinois University
DeKalb, IL 60115-2875
Telephone: (815) 753-7201
Student Financial Aid

The College of Engineering and Engineering Technology offers the scholarships listed below. Most scholarships have specific application criteria and deadlines. Recipients are selected by the college or department designated.

- AG Communication Systems Scholarship (full-time undergraduate EE majors, EE office)
- American Society of Safety Engineers Scholarship (technology majors, TECH Office)
- Association of Old Crows Scholarship (junior and senior engineering and hard science majors, EE, ME, IE, Physics, Math and Chemistry, EE office)
- Dean’s Diversity Scholarship for Freshmen and Transfers (all majors, Associate Dean’s Office)
- Energy Systems Group Scholarship Award in Engineering (incoming seniors in electrical engineering or mechanical engineering, Associate Dean’s Office)
- Ideal Industries Foundation Engineering Scholarship (junior and senior electrical engineering and mechanical engineering majors, Dean’s Office)
- Leadership Tuition Waiver for Women and Minorities (all majors, Associate Dean’s Office)
- Marsden Scholarship (junior and senior mechanical majors, Dean’s Office)
- Northeastern Illinois Chapter NECA Scholarship (sophomore, junior, senior electrical engineering majors or engineering technology majors, Associate Dean’s Office)
- Omron Foundation Electronic Engineering Endowed Scholarship (junior and senior electrical engineering majors, EE Office)
- Seven K Scholarship (technology majors, TECH Office)
- Shure Brothers Electrical Engineering Scholarship (junior and senior electrical engineering majors, EE Office)
- Society of Manufacturing Engineers (all majors, TECH Office)
- Society of Plastic Engineers (technology majors, TECH Office)

During the fall and spring semesters, the college occasionally receives information about scholarships sponsored by industry, professional organizations, or national agencies. This information is posted on bulletin boards outside the Associate Dean’s office and department offices. For further information on scholarships offered by a specific department or office, please contact that department office directly.
Illinois Public Community College Transfer Students and Graduates Intending to Major in Engineering

The College of Engineering and Engineering Technology encourages students and graduates of public community colleges to apply to Northern Illinois University to complete their engineering degree. Northern Illinois University permits students to transfer up to a maximum of 66 semester hours of community college credit.

Illinois public community college students are encouraged to complete as many of the required engineering courses listed below at the community college before transferring to NIU based on course availability at the community college. The Northern Illinois University Articulation Handbook for Illinois Community Colleges should be consulted for the equivalent course offered at the community college. For consideration for admission to an engineering major, the College of Engineering and Engineering Technology will only accept in transfer course work equivalent to the NIU calculus-based physics sequence PHYS 250A and PHYS 251A.

Recommended courses to complete at the community college (based on course availability): (Note: The articulation of these courses is listed in the Northern Illinois University Articulation Handbook for Illinois Community Colleges, which is available in the academic departments and the Office of the Associate Dean.) Also, NIU fully participates in Phase I and Phase II of the Illinois Articulation Initiative (IAI).

Community college transfer students and graduates should also consult the section on “Special General Education Requirements in the Humanities/Arts, Social Sciences, and Interdisciplinary Studies for Electrical Engineering, Industrial Engineering, and Mechanical Engineering Majors” regarding completion of general education courses in the humanities, arts, and social sciences to satisfy both NIU general education and the Accreditation Board for Engineering and Engineering Technology (ABET) Requirements. The College of Engineering and Engineering Technology honors the Illinois Articulation Initiative and recognizes the General Education Core Competency completion requirements for transfer students.

CHEM 210T & 212, General Chemistry
COMS 100, Fundamentals of Oral Communications
CSCI 230, Computer Programming in FORTRAN (ME majors only)
CSCI 240, Computer Programming in C
ELE 210, Engineering Circuit Analysis
ELE 210U, Engineering Circuit Analysis Project (EE majors only)
ENGL 103, Rhetoric and Composition I
ENGL 104, Rhetoric and Composition II
MATH 229, Calculus I
MATH 230, Calculus II
MATH 232, Calculus III
MATH 336, Differential Equations
MEE 210, Engineering Mechanics I
MEE 211, Engineering Mechanics II
MEE 212, Strength of Materials (ME majors only)
MEE 270, Engineering Graphics (not required for EE majors)
PHYS 250A, Fundamentals of Physics I, calculus-based
PHYS 251A, Fundamentals of Physics II, calculus-based
PHYS 260, General Physics III (EE majors only)
UEET 101, Introduction to Engineering
University Requirements

The university requires a minimum of 120 semester hours for the baccalaureate degree. In fulfilling the 120 semester hour graduation requirement, no more than 8 semester hours may be counted in elective physical education activity courses, or more than 6 semester hours in workshop or special/multiple topic courses taken outside the student’s major or minor. These limitations include all transfer hours as well as NIU semester hours earned.

A minimum of 40 semester hours of the total semester hours required for graduation must be in courses numbered 300 and/or 400. These must include at least 12 semester hours of major departmental courses taken at NIU.

General education courses are courses required for all majors by the university for the completion of a baccalaureate degree. The required 29-41 semester hours in the general education program are divided into two groups. Some of the courses required for a major in the College of Engineering and Engineering Technology may also count as general education credit.

- Core Competency Requirements (0-12 semester hours). The core competencies cover reading, writing, listening, speaking, and mathematical skills.
- Distributive Studies Area Requirements (a minimum of 29 semester hours)
  - Humanities and the Arts (9-12 hours)*
  - Science and Mathematics (7-11 hours)
  - Social Sciences (6-9 hours)*
  - Interdisciplinary Studies (3-6 hours)*

*Engineering majors must also satisfy additional criteria required by the Accreditation Board for Engineering and Technology (ABET) regarding the selection of these courses. These majors should see the section on “Special General Education Requirements in the Humanities/Arts, Social Sciences, and Interdisciplinary Studies for Electrical Engineering, Industrial Engineering and Mechanical Engineering Majors” on the next page.

Major Requirements

The requirements for completion of a major in the College of Engineering and Engineering Technology are listed in the Undergraduate Catalog as follows. Some hours required for the major may also fulfill general education requirements.

- Major in Electrical Engineering: 106 hours (Total of 133 hours for B.S. Degree)
- Major in Industrial Engineering: 108 hours (Total of 129 hours for B.S. Degree)
- Major in Mechanical Engineering: 108/109 hours (135/136 hours for B.S. Degree)
- Major in Technology
  - Engineering Technology: 83-102 hours (122/125 hours for B.S. Degree)
  - Industrial Technology: 87-92 hours (120 hours for B.S. Degree)
Special General Education Requirements for Electrical, Industrial, and Mechanical Engineering Majors

All engineering majors must fulfill the university’s general education requirements (2002-2003 Undergraduate Catalog) as well as the requirements of the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Although transfer students with the A.A. or A.S. degree may already have completed the university’s general education requirements, their course work must include 18 hours of general education course work which fulfills ABET requirements.

Meeting ABET requirements means selecting the 18 hours of general education course work to include one sequence in the humanities and arts and one sequence in the social sciences. A sequence is defined as a minimum of 6 hours of course work chosen from the same department; however, related course work from two different departments or disciplines may also be selected to form a sequence. The two sequences cannot be chosen from the same department. The courses chosen for the two sequences, along with the remaining hours, must be selected from the courses listed in the general education requirements section of the 2002-2003 Undergraduate Catalog. Transfer courses selected from the NIU Articulation Handbook for Illinois Community Colleges must articulate as courses listed in the general education requirements or as humanities or social science electives. Approved sequences in the humanities and arts and the social sciences are listed on the following pages. Students are required to consult with their faculty advisers for approval of all course and sequence selections not shown below to insure fulfillment of the university general education and ABET requirements.

Microelectronics Research and Development Lab
### Approved Sequences in Humanities and the Arts

Select two courses from a numbered box of courses listed below, do not choose classes from two different boxes. Follow the directions for each box carefully.

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
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<tbody>
<tr>
<td>ARTH 282</td>
<td>HIST 110</td>
<td>ENGL 110</td>
</tr>
<tr>
<td>ARTH 291</td>
<td>or</td>
<td>or</td>
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<tr>
<td>ARTH 292</td>
<td>HIST 111</td>
<td>ENGL 115</td>
</tr>
<tr>
<td>ARTH 293</td>
<td>or</td>
<td>or</td>
</tr>
<tr>
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<td>HIST 112</td>
<td>ENGL 116</td>
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<td>or</td>
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</tr>
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<td>ARTH 385</td>
<td>HIST 141</td>
<td>ENGL 310</td>
</tr>
<tr>
<td>ARTH 395</td>
<td>and one of the following:</td>
<td>ENGL 315</td>
</tr>
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<td>ARTH 396</td>
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<th>6.</th>
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<tr>
<td>FLFR 371 and FLRU 261</td>
<td>COMS 356 and COMS 410</td>
<td>ARTH 378 and HIST 141</td>
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<tr>
<th>7.</th>
<th>8.</th>
<th>9.</th>
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<tbody>
<tr>
<td>ILAS 225&lt;sup&gt;1&lt;/sup&gt; and one of the following:</td>
<td>PHIL 342 and any one ARTH course listed above in #1</td>
<td>ARTH 288&lt;sup&gt;1&lt;/sup&gt; and one of the following:</td>
</tr>
<tr>
<td>ARTH 378</td>
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<td>HIST 141</td>
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<td>COMS 356</td>
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<td>PHIL 342</td>
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<tr>
<th>10.</th>
<th>11.</th>
<th>12.</th>
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<tr>
<td>PHIL 101 or PHIL 103 and one of the following:</td>
<td>TH-D 222 or FLIT 272 and one of the following:</td>
<td>MUSC 220 ENGL 110 ENGL 310</td>
</tr>
<tr>
<td>PHIL 231</td>
<td>ARTH 282</td>
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<td>PHIL 342</td>
<td>MUSC 220</td>
<td></td>
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<tr>
<td>PHIL 370</td>
<td>THEA 203</td>
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<sup>1</sup>A general education interdisciplinary studies course; to fulfill the general education requirements in interdisciplinary studies, engineering majors need only one interdisciplinary studies course.
## Approved Sequences in Social Sciences

Select two courses from a numbered box of courses listed below, do not choose classes from two different boxes. Follow the directions for each box carefully.

<table>
<thead>
<tr>
<th></th>
<th>1. ANTH 120</th>
<th>2. ECON 260² and ECON 261</th>
<th>3. GEOG 202 and GEOG 253</th>
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<td>ANTH 220</td>
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<td>ANTH 230</td>
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<tr>
<td>4.</td>
<td>POLS 100</td>
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<td></td>
<td>or POLS 181</td>
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<tr>
<td></td>
<td>and one of the following:</td>
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<td></td>
<td>POLS 260</td>
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<td></td>
<td>POLS 350</td>
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<tr>
<td>5.</td>
<td>SOCI 170</td>
<td>and one of the following:</td>
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<td></td>
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<td>SOCI 250</td>
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<td>SOCI 260</td>
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<td>6.</td>
<td>FCNS 230</td>
<td>and one of the following:</td>
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<td></td>
<td></td>
<td>PSYC 102²</td>
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<td></td>
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<td>SOCI 170</td>
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<td></td>
<td>SOCI 260</td>
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<td>ANTH 210</td>
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<td>ANTH 220</td>
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<td>ANTH 230</td>
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<td>8.</td>
<td>TLSE 200¹ or FCNS 280¹ or ILAS 230¹</td>
<td>and one of the following:</td>
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<tr>
<td></td>
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<td>PSYC 102²</td>
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<td>SOCI 170</td>
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<td>SOCI 250</td>
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<td></td>
<td>SOCI 260</td>
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<td>9.</td>
<td>FCNS 207¹</td>
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<td></td>
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<td>ECON 260²</td>
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<td>ECON 261</td>
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<tr>
<td>10.</td>
<td>ILAS 123</td>
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<td></td>
<td>or EPFE 201¹</td>
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<td></td>
<td>and one of the following:</td>
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<td>ANTH 220</td>
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<td></td>
<td>SOCI 250</td>
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</tbody>
</table>

¹A general education interdisciplinary studies course; to fulfill the general education requirements in interdisciplinary studies, engineering majors need only one interdisciplinary studies course.

²Industrial Engineering majors are required to take PSYC 102 and ECON 260 and therefore should combine one of these courses with an interdisciplinary studies course to form a sequence in social sciences.
The Department of Electrical Engineering

The Department of Electrical Engineering offers a B.S., as well as, a M.S. degree program in electrical engineering. The undergraduate program is accredited by the Accreditation Board for Engineering and Technology (ABET). Students are directly admitted to this major upon their admission to the university.

The electrical engineering discipline involves design, development, and operation of systems that generate and use electronic signals. In the electrical engineering curriculum, students acquire both a fundamental and practical knowledge of electronic devices and circuits, electromagnetic fields, electronic materials, digital signals and systems, computers, and many forms of electronic design.

The Department of Electrical Engineering at NIU offers courses in:
• Circuit Analysis and Design
• Signals and Systems
• Microelectronic Devices and Integrated Circuits
• Communication Systems
• Electromagnetic Fields
• Control Systems
• Computer-Aided Circuit Design
• Antenna Design
• Computer Architecture
• Microwave Circuits
• Digital Signal Processing
• Microprocessors
• Biomedical Engineering
• Electronic Instrumentation

Electrical Engineering Educational Objectives

As an individual and as a member of a team, our graduates will be able to:

1. Demonstrate the ability to formulate, analyze and solve electrical engineering problems and ensures the ability to handle current, as well as, future engineering issues.

2. Demonstrate the ability to apply the design process to engineering problems.

3. Communicate effectively with those inside and outside of electrical engineering.

4. Exhibit social and professional responsibility in a global context.

Major industrial areas for electrical engineering employment are:

♦ Communication systems (two-way, cellular telephone)
♦ Digital systems (digital design, digital signal processing, image processing, computers, computer architecture)
♦ Control systems (analog and digital servomechanisms, nonlinear control systems)
♦ Electromagnetic fields, microwave systems (power electronics, radio frequency systems, microwave systems)
♦ Semiconductors (large-scale semiconductor integrated circuits, microelectronic devices and integrated circuits, thick and thin film hybrid circuits)
♦ Electronic circuit design (filters, special circuitry)

The suggested degree plan for the B.S. with a major in electrical engineering is shown on the next page. During the senior year, electrical engineering majors complete a two-semester senior design project which is the capstone of the electrical engineering curriculum. In addition, electrical engineering majors are required to take the State of Illinois Fundamentals of Engineering (FE/EIT) examination during their first semester senior year. Students should consult the 2002-2003 Undergraduate Catalog for complete degree requirements.
# Northern Illinois University
## Department of Electrical Engineering
### Suggested Four-Year Degree Plan (Ref: 2002-2003 Undergraduate Catalog)

**FRESHMAN YEAR**  
**FIRST SEMESTER: Total 15 hours**  
- **ENGL 103** Rhetoric and Composition I 3  
- **MATH 229** Calculus I 4  
- **CHEM 210T+212** General Chemistry & Lab 4  
- **UEET 101** Introduction to Engineering 1  
- **GEN-ED\(^1\)** Humanities from LA&S 3  

**SECOND SEMESTER: Total 18 hours**  
- **ENGL 104** Rhetoric and Composition II 3  
- **MATH 230** Calculus II 4  
- **PHYS 250A+250U** Fund of Physics I & Lab 4  
- **ELE 250** Computer Engineering I 4  
- **GEN-ED\(^2\)** Humanities from V&PA 3

**SOPHOMORE YEAR**  
**FIRST SEMESTER: Total 18 hours**  
- **MATH 232** Calculus III 4  
- **PHYS 251A+251U** Fund of Physics II & Lab 4  
- **ELE 210+210U** Engr Circuit Analysis & Lab 4  
- **STAT 350** Intro to Probability and Statistics 3  
- **or IENG 335** Statistics for Engineering (3)  
- **COMS 100** Fund. of Oral Communication 3  

**SECOND SEMESTER: Total 17 hours**  
- **CSCI 240** Computer Programming in C 4  
- **MATH 336** Ordinary Diff. Equations 3  
- **ELE 340** Electrical Power Systems 4  
- **PHYS 260** General Physics III 3  
- **GEN-ED\(^2\)** Humanities LA&S or V&PA 3  

**JUNIOR YEAR**  
**FIRST SEMESTER: Total 17 hours**  
- **ELE 315** Signals and Systems 3  
- **ELE 330** Electronic Circuits 4  
- **ELE 335** Theory of Semiconductor Dev. I 3  
- **ELE 356** Computer Engineering II 4  
- **MEE 210** Engineering Mechanics I 3  

**SECOND SEMESTER: Total 17 hours**  
- **ELE 360** Communications Systems 4  
- **IENG 220** Engineering Economy 3  
- **ELE 370** Engineering Electromagnetics 3  
- **ELE 380** Control Systems I 4  
- **or MEE 322** Dynamic Systems and Control I (4)  
- **MEE 211** Engineering Mechanics II 3

**SENIOR YEAR**  
**FIRST SEMESTER: Total 16 hours**  
- **ELE 491** Electrical Engr Dsgn Proposal 1  
- **TECH ELE\(^3\)** Technical Elective 3  
- **TECH ELE\(^3\)** Technical Elective 3  
- **TECH ELE\(^3\)** Technical Elective 3  
- **GEN-ED\(^2\)** Social Science 3  
- **GEN-ED\(^2\)** Interdisciplinary 3  

**SECOND SEMESTER: Total 15 hours**  
- **ELE 492** Electrical Engr Dsgn Project 3  
- **TECH ELE\(^3\)** Technical Elective 3  
- **TECH ELE\(^3\)** Technical Elective 3  
- **TECH ELE\(^3\)** Technical Elective 3  
- **GEN-ED\(^2\)** Social Science 3  

Total hours for degree program: 133

\(^1\)Need Placement Examination.

\(^2\)Your adviser must approve your general education courses.

\(^3\)Electives may be any ELE course numbered 400 or higher with the exception of ELE 491, ELE 492, and ELE 497. With the approval of the Department of Electrical Engineering, other mathematics, sciences, or engineering courses may be used as electives. At least 12 of these 18 semester hours must be from the Department of Electrical Engineering.
Industrial Engineering is a system-oriented discipline, which involves the design, installation, management, operation, and improvement of systems that produce goods and services. This discipline follows an integrated approach throughout the entire life cycle of a product or service, from design to production, delivery, and consumer support. Industrial engineers are involved in functions such as designing a complete production facility or a single workplace; setting operator performance standards; planning manufacturing processes; planning and controlling production; designing quality control systems; analyzing system reliability; simulating system performance; and planning and evaluating large-scale projects. Industrial engineers are employed by a broad variety of organizations, including manufacturing industries, utilities, transportation, health care systems, financial institutions, and all levels of government agencies.

The Department of Industrial Engineering offers a B.S., as well as, a M.S. in industrial engineering. The department also offers an integrated B.S./M.S. Sequence. This plan is available to all industrial engineering majors who have finished at least 90 semester hours of undergraduate work and have a cumulative GPA of at least 3.00. When students enter the integrated sequence, they must formulate a detailed plan to study and work closely with a faculty adviser throughout the program. Failure to do so may delay graduation. The undergraduate program is accredited by the Accreditation Board for Engineering and Technology (ABET). Students are directly admitted to this major upon their admission to the university.

The undergraduate curriculum is designed to provide students with the skills and training necessary to become successful practitioners and focuses on principles of mathematics; physical, engineering and behavioral sciences; engineering design; and humanities and social sciences. To help prepare students for careers as industrial engineers, the Department of Industrial Engineering provides access to a variety of courses and facilities, a diverse faculty with years of industrial experience, and a program emphasizing practical applications as well as theoretical developments in industrial engineering.

A suggested degree plan for the B.S. with a major in industrial engineering is shown on the next page. Industrial Engineering majors are required to take the State of Illinois Fundamentals of Engineering (FE/EIT) examination during their first semester senior year. Students should consult the 2002-2003 Undergraduate Catalog for complete university and department degree requirements.
## Northern Illinois University
### Department of Industrial Engineering

### Suggested Four-Year Degree Plan (Ref: 2002-2003 Undergraduate Catalog)

#### FRESHMAN YEAR

**FIRST SEMESTER: Total 15 hours**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>ENGL 103</td>
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<td>3</td>
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<tr>
<td>MATH 229</td>
<td>Calculus I</td>
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</tr>
<tr>
<td>CHEM 210T+212</td>
<td>General Chemistry &amp; Lab</td>
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<td>UEET 101</td>
<td>Introduction to Engineering</td>
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<td>Humanities from LA&amp;S</td>
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**SECOND SEMESTER: Total 17 hours**

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<th>Title</th>
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<td>ENGL 104</td>
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<td>3</td>
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<td>MATH 230</td>
<td>Calculus II</td>
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<td>Fund of Physics I &amp; Lab</td>
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<tr>
<td>MEE 270</td>
<td>Engineering Graphics</td>
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<td>COMS 100</td>
<td>Fund. of Oral Communication</td>
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#### SOPHOMORE YEAR

**FIRST SEMESTER: Total 17 hours**

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<td>Fund of Physics II &amp; Lab</td>
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<td>MEE 210</td>
<td>Engineering Mechanics I</td>
<td>3</td>
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<td>IENG 334</td>
<td>Probability for Engineering</td>
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<td>ECON 260</td>
<td>Principles of Microeconomics</td>
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**SECOND SEMESTER: Total 16 hours**

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<tr>
<th>Course</th>
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<tr>
<td>MATH 234</td>
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<tr>
<td>IENG 371</td>
<td>Engineering Mechanics II</td>
<td>3</td>
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<tr>
<td>IENG 335</td>
<td>Statistics for Engineering</td>
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<tr>
<td>ELE 210</td>
<td>Engineering Circuit Analysis</td>
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#### JUNIOR YEAR

**FIRST SEMESTER: Total 15 hours**

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<td>IENG 410</td>
<td>Human Factors Engineering</td>
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<td>IENG 350</td>
<td>Principles of Manuf. Processes</td>
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<td>PSYC 102</td>
<td>Introduction to Psychology</td>
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**SECOND SEMESTER: Total 18 hours**

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<td>PSYC 102</td>
<td>Introduction to Psychology</td>
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<td>TECH ELE³</td>
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<td>GEN-ED²</td>
<td>Humanities from V&amp;PA</td>
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<tr>
<td>GEN-ED²</td>
<td>Interdisciplinary</td>
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#### SENIOR YEAR

**FIRST SEMESTER: Total 15 hours**

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<tr>
<td>IENG 440</td>
<td>Production Planning &amp; Control</td>
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<tr>
<td>IENG 460</td>
<td>Facilities Planning &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>IENG 480</td>
<td>Simulation Modeling &amp; Analysis</td>
<td>3</td>
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<tr>
<td>TECH ELE³</td>
<td>Technical Elective</td>
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<tr>
<td>TECH ELE³</td>
<td>Technical Elective</td>
<td>3</td>
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<tr>
<td>TECH ELE³</td>
<td>Technical Elective</td>
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<tr>
<td>TECH ELE³</td>
<td>Technical Elective</td>
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</tr>
<tr>
<td>GEN-ED²</td>
<td>Humanities LA&amp;S or V&amp;PA</td>
<td>3</td>
</tr>
</tbody>
</table>

Total hours for degree program: 129

¹Need Placement Examination.

²Your adviser must approve your general education courses.

³Choose five of the following, including at least 9 semester hours of industrial engineering course work: ACCY 206, ACCY 207, ACCY 288, BIOS 311, ELE 215, MATH 240, MATH 339, MATH 360, MATH 380, MATH 434, MATH 435, MGMT 333, OMIS 351, OMIS 442, OMIS 477, PSYC 345, STAT 470, STAT 473, STAT 473A, STAT 474, STAT 478, any 300 or 400 level course in electrical, industrial or mechanical engineering except MEE 330, MEE 331, and required courses.
The Department of Mechanical Engineering offers a B.S. as well as M.S. degree program in mechanical engineering. The undergraduate program is accredited by the Accreditation Board for Engineering and Technology (ABET).

The mechanical engineering curriculum is based on a strong foundation of fundamental courses in the pure sciences and engineering and professional courses in mechanical engineering. The curriculum also provides a background in the design, development, and applications of both complete systems and a wide variety of individual system components in many different fields.

The program encompasses many areas, such as solid mechanics, dynamics, controls, fluid mechanics, thermodynamics, heat and mass transfer, energy conversion, manufacturing, and tribology. This background is strengthened and integrated through application in a sequence of broad engineering design and laboratory courses. Computers are used extensively throughout the curriculum, with special emphasis on interactive computer design/computer-aided manufacturing. The department also has a significant amount of equipment for experimental investigations and has access to the university’s digital and analog computer systems.

Mechanical engineers work in a wide spectrum of technical settings in engineering and design, research and development, manufacturing, and management. Major industrial areas employing mechanical engineers are:

- Engineering-architectural firms
- Automotive
- Nuclear industries
- Aerospace
- Electric, gas, and water utilities
- Petrochemicals
- Petroleum production and refining
- Manufacturing
- Waste management
- Environmental protection
- Pharmaceuticals and food processes
- Defense industries

A suggested degree plan for the B.S. with a major in mechanical engineering is shown on the next page. In the senior year, mechanical engineering majors complete a two-semester senior design project which is the capstone of the mechanical engineering curriculum. In addition, mechanical engineering majors are required to take the State of Illinois Fundamentals of Engineering (FE/EIT) examination during their first semester senior year. Students should consult the 2002-2003 Undergraduate Catalog for complete university and department degree requirements.
# Northern Illinois University
## Department of Mechanical Engineering
### Suggested Four-Year Degree Plan (Ref: 2002-2003 Undergraduate Catalog)

#### FRESHMAN YEAR
**FIRST SEMESTER:** Total 18 hours  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 103</td>
<td>Rhetoric and Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 229</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 250A+250U</td>
<td>Fund of Physics I &amp; Lab</td>
<td>4</td>
</tr>
<tr>
<td>UEET 101</td>
<td>Introduction to Engineering</td>
<td>1</td>
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<tr>
<td>GEN-ED²</td>
<td>Humanities from LA&amp;S</td>
<td>3</td>
</tr>
<tr>
<td>MEE 270</td>
<td>Engineering Graphics</td>
<td>3</td>
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**SECOND SEMESTER:** Total 17 hours  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGL 104</td>
<td>Rhetoric and Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 230</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 251A+251U</td>
<td>Fund of Physics II &amp; Lab</td>
<td>4</td>
</tr>
<tr>
<td>MEE 210</td>
<td>Engineering Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>GEN-ED²</td>
<td>Humanities from V&amp;PA</td>
<td>3</td>
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#### SOPHOMORE YEAR
**FIRST SEMESTER:** Total 18 hours  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 232</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 210T+212</td>
<td>General Chemistry I &amp; Lab</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 230</td>
<td>Computer Prog. in FORTRAN</td>
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<tr>
<td>or CSCI 240</td>
<td>Computer Programming in C (4)</td>
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<tr>
<td>MEE 211</td>
<td>Engineering Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>COMS 100</td>
<td>Fund. Of Oral Communications</td>
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**SECOND SEMESTER:** Total 16 hours  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ELE 210</td>
<td>Engineering Circuit Analysis</td>
<td>3</td>
</tr>
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</table>
| MATH 336     | Ordinary Differential Equations | 3  
| MEE 330      | Materials Science            | 4       |
| IENG 220     | Engineering Economy          | 3       |
| MEE 212      | Strength of Materials        | 3       |

#### JUNIOR YEAR
**FIRST SEMESTER:** Total 18 hours  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MEE 321</td>
<td>Mechanical Vibrations I</td>
<td>3</td>
</tr>
<tr>
<td>MEE 340</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MEE 350</td>
<td>Engineering Thermodynamics</td>
<td>3</td>
</tr>
</tbody>
</table>
| STAT 350     | Intro to Probability & Statistics | 3  
| or IENG 335  | Statistics for Engineering (3) | |  
| GEN-ED²      | Humanities from LA&S or V&PA | 3       |
| GEN-ED²      | Social Science               | 3       |

**SECOND SEMESTER:** Total 18 hours  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MEE 220</td>
<td>Mechanism Design</td>
<td>3</td>
</tr>
<tr>
<td>MEE 331</td>
<td>Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>MEE 352</td>
<td>Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>MEE 380</td>
<td>Comp Methods in Eng. Dsgn</td>
<td>3</td>
</tr>
<tr>
<td>ELE 215</td>
<td>Electronic Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>GEN-ED²</td>
<td>Social Science</td>
<td>3</td>
</tr>
</tbody>
</table>

#### SENIOR YEAR
**FIRST SEMESTER:** Total 15 hours  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEE 322</td>
<td>Dynamic Systems &amp; Control I</td>
<td>4</td>
</tr>
<tr>
<td>or ELE 380</td>
<td>Control Systems (I) (4)</td>
<td></td>
</tr>
</tbody>
</table>
| MEE 390      | Exp Methods in Mechanical Eng I | 3  
| MEE 430      | Computer Aided Design & Mfg  | 3       |
| MEE 470      | Design of Machine Elements   | 3       |
| MEE 481      | Engineering Design Seminar   | 1       |
| MEE 494      | Mechanical Eng. Competency   | 1       |

**SECOND SEMESTER:** Total 15 hours  
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| MEE 482      | Senior Mech.I Eng. Dsgn Project | 3  
| TECH ELE³    | Engr Dsgn Technical Elective | 3       |
| TECH ELE³    | Engr Dsgn Technical Elective | 3       |
| TECH ELE⁴    | Engr Science Technical Elec. | 3       |
| GEN-ED²      | Interdisciplinary            | 3       |

Total hours for degree program: 135

¹Need Placement Examination.

²Your adviser must approve your general education courses.

³Choose two of the following: IENG 431, IENG 450, IENG 451, MEE 410, MEE 422, MEE 424, MEE 425, MEE 431, MEE 451, MEE 452, MEE 453, MEE 490, TECH 345, TECH 441.

⁴Choose one of the following: IENG 430T, MEE 351, MEE 421, MEE 423, MEE 480.
The Bachelor of Science (B.S.) degree with a major in technology offers two emphases described below: engineering technology and industrial technology.

**Engineering Technology:**

**Electrical Engineering Technology (EET) emphasis:**
A well-rounded degree with studies in areas such as digital logic, communications, controls, and microprocessors. Most of the EET courses include a laboratory component, which augments and enhances the science principles taught. Students make extensive usage of state of the art computers, using software like P-Spice and Matlab. Students in the EET program learn experimental techniques in well-equipped electronics, microprocessor, communications, machines, and controls laboratories. Career opportunities for electrical engineering technology graduates include:

- Communications
- Testing
- Measurement & Inspection
- Analysis
- Industrial Control
- Electrical Design
- Maintenance/Service
- Digital Electronic Design
- Control Systems
- CAE

**Manufacturing Engineering Technology (MET) emphasis:**
Covers the diverse hands-on field of manufacturing systems and processes. Many of the manufacturing courses have experimental components which are taught concurrently with theoretical aspects. Students are taught to utilize current concepts and equipment within the manufacturing curriculum. MET students work with PLC’s, CNC machines, and automation components. Career opportunities for manufacturing engineering technology graduates include:

- Quality Assurance
- Design Analysis
- Process Planning
- Plant Management
- Computer Integrated Manuf.
- Materials Handling
- Automation
- Computer Controller Machining
- Manufacturing Processes
- PLC Integration

**Industrial Technology** offers alternatives in Computer-Aided Design, Manufacturing Technology, Plastics Technology, Occupational Safety and other technical fields. It prepares students for careers in industrial management in their selected field. The student becomes familiar with various industrial processes during hands-on laboratory experience. The B.S. degree program in Industrial Technology is accredited by the National Association of Industrial Technology (NAIT). Career opportunities for industrial technology graduates include:

- Industrial training
- Production control
- Engineering Graphics
- Production planning
- Manuf. supervision
- Industrial Design
- Project engineering
- Quality control
- Technical Sales
- Industrial safety
- Work Measurement
- Manufacturing Processes
- Industrial sales

The suggested degree plans for a major in the technology department are listed on the accompanying pages. Because of the diverse demands challenging today’s technologists, the technology majors provide broad educational programs integrating in-depth technology courses with additionally required general education courses. Majors are advised to consult the 2002-2003 Undergraduate Catalog for complete degree requirements.
Northern Illinois University  
Department of Technology-Electrical Engineering Technology Emphasis  
Suggested Four-Year Degree Plan (Ref: 2002-2003 Undergraduate Catalog)  

<table>
<thead>
<tr>
<th>FRESHMAN YEAR</th>
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<tbody>
<tr>
<td><strong>FIRST SEMESTER:</strong> Total 15 hours</td>
<td><strong>SECOND SEMESTER:</strong> Total 15 hours</td>
</tr>
<tr>
<td>ENGL 103 Rhetoric and Composition I 3</td>
<td>ENGL 104 Rhetoric and Composition II 3</td>
</tr>
<tr>
<td>MATH 155 Trigonometry &amp; Elem Functions 3</td>
<td>MATH 229 Calculus I 4</td>
</tr>
<tr>
<td>TECH 211 Computer-Aided Design 3</td>
<td>TECH 175 Elec. &amp; Electronics Fundamentals 3</td>
</tr>
<tr>
<td>COMS 100 Fund. of Oral Communication 3</td>
<td>TECH 175A Lab 1</td>
</tr>
<tr>
<td>GEN-ED Humanities from LA&amp;S 3</td>
<td>PHYS 250 General Physics I 4</td>
</tr>
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<thead>
<tr>
<th>SOPHOMORE YEAR</th>
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<tbody>
<tr>
<td><strong>FIRST SEMESTER:</strong> Total 15 hours</td>
<td><strong>SECOND SEMESTER:</strong> Total 16 hours</td>
</tr>
<tr>
<td>MATH 230 Calculus II 4</td>
<td>CSCI 240 Computer Programming in C 4</td>
</tr>
<tr>
<td>CHEM 110+111 Chemistry &amp; Lab 4</td>
<td>TECH 271 Elec. Fund &amp; Circuit Analysis II 3</td>
</tr>
<tr>
<td>TECH 270 Elec. Fund &amp; Circuit Analysis I 3</td>
<td>TECH 271A Lab 1</td>
</tr>
<tr>
<td>TECH 270A Lab 1</td>
<td>TECH 276 Electronics I 3</td>
</tr>
<tr>
<td>GEN-ED Humanities from V&amp;PA 3</td>
<td>TECH 277 Digital and Logic Design 3</td>
</tr>
<tr>
<td>TECH 277A Lab 1</td>
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<table>
<thead>
<tr>
<th>JUNIOR YEAR</th>
<th></th>
</tr>
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<tbody>
<tr>
<td><strong>FIRST SEMESTER:</strong> Total 16 hours</td>
<td><strong>SECOND SEMESTER:</strong> Total 18 hours</td>
</tr>
<tr>
<td>TECH 375 Control Systems 3</td>
<td>TECH 377 Microprocessors and Interfacing 3</td>
</tr>
<tr>
<td>TECH 376 Electronics II 3</td>
<td>TECH 377A Lab 1</td>
</tr>
<tr>
<td>TECH 376A Lab 1</td>
<td>TECH 378 Communication Systems Design I 3</td>
</tr>
<tr>
<td>STAT 208 Basic Statistics 3</td>
<td>TECH 378A Lab 1</td>
</tr>
<tr>
<td>Or STAT 301 Elementary Statistics (4)</td>
<td>TECH 379 Electric Machines and Transformers 3</td>
</tr>
<tr>
<td>EET Elective (See Below) 3</td>
<td>TECH 379A Lab 1</td>
</tr>
<tr>
<td>GEN-ED Humanities/ LA&amp;S or V&amp;PA 3</td>
<td>TECH 379 Elective (See Below) 3</td>
</tr>
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<td>TECH 379 Elective (See Below) 3</td>
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<tbody>
<tr>
<td><strong>FIRST SEMESTER:</strong> Total 16 hours</td>
<td><strong>SECOND SEMESTER:</strong> Total 15 hours</td>
</tr>
<tr>
<td>TECH 443 Engineering Economy 3</td>
<td>TECH 265 Basic Manufacturing Processes 3</td>
</tr>
<tr>
<td>TECH 476 Industrial Control Electronics 3</td>
<td>TECH 478 Eng Tech Senior Design Project II 3</td>
</tr>
<tr>
<td>TECH 477 Eng Tech Senior Dsgn Project I 1</td>
<td>GEN-ED Interdisciplinary 3</td>
</tr>
<tr>
<td>GEN-ED Social Science 3</td>
<td>GEN-ED Social Science 3</td>
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<tr>
<td>EET Elective (See Below) 3</td>
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</tr>
<tr>
<td>EET Elective (See Below) 3</td>
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</table>

Total hours for degree program: 125

Choose 6 courses out of the following with advice and consent of your adviser: TECH 395, TECH 398E, TECH 425, TECH 430, TECH 470, TECH 471, TECH 427&472A, TECH 473, TECH 479.
## Northern Illinois University

**Department of Technology-Manufacturing Engineering Technology Emphasis**

**Suggested Four-Year Degree Plan (Ref: 2002-2003 Undergraduate Catalog)**

### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>FIRST SEMESTER</th>
<th>SECOND SEMESTER</th>
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<tbody>
<tr>
<td>ENGL 103 Rhetoric and Composition I 3</td>
<td>ENGL 104 Rhetoric and Composition II 3</td>
</tr>
<tr>
<td>MATH 155 Trigonometry &amp; Elem Functions 3</td>
<td>MATH 229 Calculus I 4</td>
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<tr>
<td>TECH 211 Computer-Aided Design 3</td>
<td>TECH 265 Basic Manufacturing Processes 3</td>
</tr>
<tr>
<td>CHEM 110+111 Chemistry &amp; Lab 4</td>
<td>TECH 360 Machine Production Processes 3</td>
</tr>
<tr>
<td>or CHEM 210T+212 General Chemistry I &amp; Lab (4)</td>
<td>GEN-ED Humanities from V&amp;PA 3</td>
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<tr>
<td>GEN-ED Humanities from LA&amp;S 3</td>
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### SOPHOMORE YEAR

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<tr>
<th>FIRST SEMESTER</th>
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<tbody>
<tr>
<td>MATH 230 Calculus II 4</td>
<td>STAT 208 Basic Statistics 3</td>
</tr>
<tr>
<td>PHYS 250 General Physics I 4</td>
<td>STAT 301 Elementary Statistics (4) 3</td>
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<tr>
<td>COMS 100 Fund. Of Oral Communications 3</td>
<td>TECH 310 Engineering Mechanics 4</td>
</tr>
<tr>
<td>TECH 175 Elec. &amp; Electricity Fundamentals 3</td>
<td>TECH 393 Structure and Properties of Materials 3</td>
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<tr>
<td>TECH 175A Lab 1</td>
<td>MET Elective Manuf Process Elective 3</td>
</tr>
<tr>
<td>GEN-ED Humanities/ LA&amp;S or V&amp;PA 3</td>
<td>GEN-ED Social Science 3</td>
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### JUNIOR YEAR

<table>
<thead>
<tr>
<th>FIRST SEMESTER</th>
<th>SECOND SEMESTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECH 369 Strength of Materials 3</td>
<td>TECH 395 Industrial Data Processing 3</td>
</tr>
<tr>
<td>TECH 425 Programmable Electronic Controllers 3</td>
<td>TECH 423 Automated Manufacturing Systems 3</td>
</tr>
<tr>
<td>TECH 426 Fluid Power Technology 3</td>
<td>TECH 443 Engineering Economy 3</td>
</tr>
<tr>
<td>MET Elective Manufacturing Process 3</td>
<td>MET Elective Manufacturing Process 3</td>
</tr>
<tr>
<td>MET Elective Manufacturing System 3</td>
<td>MET Elective Manufacturing Process 3</td>
</tr>
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### SENIOR YEAR

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<tr>
<th>FIRST SEMESTER</th>
<th>SECOND SEMESTER</th>
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<tbody>
<tr>
<td>TECH 342 Manuf Component Design 3</td>
<td>TECH 362 Numerical Control Systems 3</td>
</tr>
<tr>
<td>TECH 420 Computer-Integrated Manufacturing 3</td>
<td>TECH 478 Eng Tech Senior Dsgn Proj II 3</td>
</tr>
<tr>
<td>TECH 477 Eng Tech Senior Dsgn Proj I 1</td>
<td>GEN-ED Interdisciplinary 3</td>
</tr>
<tr>
<td>TECH 491 Industrial Quality Control 3</td>
<td>MET Elective Manufacturing System 3</td>
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<td>GEN-ED Social Science 3</td>
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<tr>
<td>MET Elective Manufacturing System 3</td>
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</tr>
</tbody>
</table>

Total hours for degree program: 124

**Manufacturing Process Elective**, choose 4 courses out of the following with advice and consent of your adviser: TECH 260, TECH 312, TECH 314, TECH 344, TECH 345, TECH 364, TECH 365, TECH 479.

**Manufacturing Systems Elective**, choose 3 of the following with advice and consent of your adviser: TECH 334, TECH 394, TECH 401, TECH 402, TECH 404, TECH 408, TECH 409, TECH 429, TECH 434, TECH 442, TECH 444, TECH 482.
Northern Illinois University  
Department of Technology  
Industrial Technology  
Suggested Four-Year Degree Plan (Ref: 2002-2003 Undergraduate Catalog)

**FRESHMAN YEAR**  
**FIRST SEMESTER:** Total 16 hours  
- ENGL 103  Rhetoric and Composition I  3  
- MATH 155  Trigonometry & Elem Functions  3  
- TECH 211  Computer-Aided Design  3  
- CHEM 110+111  Chemistry & Lab  4  
- GEN-ED  Humanities from LA&S  3  

**SECOND SEMESTER:** Total 16 hours  
- ENGL 104  Rhetoric and Composition II  3  
- COMS 100  Fund. Of Oral Communications  3  
- PHYS 150A  Physics  4  
- PHYS 250  General Physics I (4)  
- GEN-ED  Humanities from V&PA  3  
- GEN-ED  Social Science  3  

**SOPHOMORE YEAR**  
**FIRST SEMESTER:** Total 16 hours  
- TECH 175  Elec. & Electricity Fundamentals  3  
- TECH 175A  Lab  1  
- TECH 265  Basic Manufacturing Processes  3  
- STAT 208  Basic Statistics  3  
- or STAT 301  Elementary Statistics (4)  
- GEN-ED  Humanities/ LA&S or V&PA  3  
- Area of Study  (See next page)  3  

**SECOND SEMESTER:** Total 15 hours  
- TECH 302  Graphic Presentation and Comm.  3  
- TECH 402  Plant Location, Layout, and Materials  3  
- ACCY 206  Intro Financial Accounting  3  
- ACCY 288  Fundamentals of Accounting (3)  
- Area of Study (See next page)  3  
- Area of Study (See next page)  3  

**JUNIOR YEAR**  
**FIRST SEMESTER:** Total 15 hours  
- TECH 395  Industrial Data Processing  3  
- TECH 404  Supervision in Industry  3  
- MGMT 346  Business Communication  3  
- Area of Study  (See next page)  3  
- Area of Study  (See next page)  3  

**SECOND SEMESTER:** Total 15 hours  
- TECH 402  Plant Location, Layout, and Materials  3  
- GEN-ED  Interdisciplinary  3  
- Area of Study (See next page)  3  
- Area of Study (See next page)  3  

**SENIOR YEAR**  
**FIRST SEMESTER:** Total 15 hours  
- TECH 394  Industrial Project Management  3  
- TECH 442  Work Simplification and Measure  3  
- Area of Study  (See next page)  3  
- TECH Elective  (See Below)  3  
- TECH Elective  (See Below)  3  

**SECOND SEMESTER:** Total 12 hours  
- TECH 491  Industrial Quality Control  3  
- TECH Elective (See Below)  3  
- General Elective (See Below)  3  
- General Elective (See Below)  3  

**Total hours for degree program:** 120

**Technical Electives:** 3 technology courses chosen with the advice and consent of the departmental adviser.

**General Elective:** 2 courses offered by any department on campus to satisfy the 120 minimum hour requirement for a B.S. Degree.
Areas of Concentration within the Industrial Technology Program

**Computer Aided Design (CAD)**
TECH 214, Machine Drawing (3)
TECH 311, Computer-Aided Modeling (3)
TECH 312, Design Dimensioning & Toler. (3)
TECH 314, Tool and Die Design (3)
TECH 409, Internship (3)
TECH 412, Technical Illustration (3)
TECH 414, Computer-Aided Machine Design (3)

**Manufacturing Technology**
Choose seven of the following (21-22)
TECH 214, Machine Drawing (3)
TECH 260, Metal Fabrication Processes (3)
TECH 334, Hazard Control in Industrial Ops (3)
TECH 344, Materials and Processes in the Plastics Industry (3)
TECH 345, Plastic Molding Processes (3)
TECH 360, Machine Production Processes (3)
TECH 365, Metrology (3)
TECH 409, Internship (3)
TECH 420, Automated Manufacturing Systems (3)
TECH 427, Testing Methods, Procedures, and Selection of Industrial Plastics (3)

**Occupational Safety**
TECH 231, Safety Programs (3)
TECH 334, Hazard Control in Industrial Ops (3)
TECH 432, Disaster Preparedness (3)
TECH 435, Legal Aspects of Safety (3)
TECH 436, Design and Administration of Industrial Safety Programs (3)
TECH 437, Industrial Hygiene (3)
TECH 481, Ergonomics (3)

**Plastics Technology**
Choose seven of the following (21-22)
TECH 312, Design Dimensioning and Toler. (3)
TECH 314, Tool and Die Design (3)
TECH 334, Hazard Control in Industrial Ops (3)
TECH 344, Materials and Processes in the Plastics Industry (3)
TECH 345, Plastic Molding Processes (3)
TECH 360, Machine Production Processes (3)
TECH 393, Structure and Properties of Mtrls (3)
TECH 409, Internship (3)
TECH 427, Testing Methods, Procedures, and Selection of Industrial Plastics (3)

**Special Technical Area**
This area is of study is limited to transfer students with an Associate of Applied Science degree with a major in a recognized field of industrial technology. Up to 23 semester hours of credit from the A.A.S. degree may be applied to this area of study with the consent of the departmental adviser and department chair.

Department of Technology
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Applying for Graduation (at the Office of Registration and Records in Williston Hall). Degrees are granted in December, May and August.

Students completing 90 or more semester hours following their admission to NIU will be sent a graduation information sheet to complete and return. This form must be returned so that the Office of Registration and Records in Williston Hall can monitor student progress toward graduation and prepare a graduation progress report which lists all of the requirements which must still be met. Students who fail to return this form may not be informed of graduation deficiencies in time to make adjustments to their program of study.

The progress report will be based on the formally declared major, minor, degree, and catalog year the student indicates. Included with the graduation progress report is a sheet of detailed information about graduation requirements.

A graduation fee payment form and teacher certification application (if applicable) will be mailed to students several months prior to the deadline for paying the graduation fee at the Bursar’s Office. Payment and application deadlines are:

December graduation-October 1
May graduation-March 1
August graduation-July 1

Students who wish to change graduation dates after the first application must file a “Change of Graduation Information” form in the Office of Registration and Records. Students completing degree requirements between degree dates may request that a statement of completion be noted on their academic records.

Special Graduation Requirement for engineering majors. Electrical engineering, industrial engineering, and mechanical engineering students who satisfy the major requirements from the 1989-90 to the 1997-98 edition of the Undergraduate Catalog are required to take either the State of Illinois Engineer-in-Training examination or a departmental equivalent examination as stated in those catalogs. However, editions after 1997-98 require electrical, industrial, and mechanical engineering students to take the State of Illinois Fundamentals of Engineering examination (EIT/FE) only, there is no departmental equivalent option.
For majors in the College of Engineering and Engineering Technology, the NIU Libraries which contain a number of technical references are the following:

Founders Memorial Library, the main library on the DeKalb campus, has five levels with 290,000 square feet of space and seating capacity for 2,200 students. Dial (815) 753-1670 for the most current building hours. The building closes at 5 p.m. the day before a holiday, recess, or interim session. Key library services including the circulation desk, the first floor reference desk, computer reference services, library instruction, the information desk, interlibrary loans, the reserve reading room, the newspaper reading room, Founders Copier Service, and an area continuing specialized equipment and research collections for the visually impaired.

The Faraday Library, contains the major portion of the university’s science collections, especially for Chemistry and Physics. Faraday Library houses complete sets of Chemical Abstracts and Physics Abstracts, as well as the most important scholarly journals in science. Faraday Library is a valuable resource for engineering and technology students. The library is located in Faraday Hall 212 on the DeKalb campus. Service Hours (regular semester) are:

- Monday-Thursday: 8:00 a.m.-10:00 p.m.
- Friday: 8:00 a.m.-5:00 p.m.
- Saturday & Sunday: CLOSED

For information on the Faraday Library, call (815) 753-1257.

The Engineering Student Reference Library/Study Lounge, located at 354 Engineering Building, is operated by the College of Engineering and Engineering Technology. This library has about 4,000 technical volumes donated by industry and individuals. Many of the references are pertinent to the senior-year engineering design projects. Most of the volumes are current reference materials dealing with interdisciplinary design, manufacturing, TQM, planning and standards. The books are classified according to the Library of Congress system. Other materials include supplementary text books, student design projects, case studies, video tapes, catalogs, software manuals and a limited collection of professional magazines. A computer link to the on-line catalog system of Founders Library and other state universities is also available. The engineering library is maintained by a librarian and student workers. Students may check out materials for three weeks. For more information call 753-0215.

- Engineering Library Hours for Fall and Spring Semesters
  - Monday - Friday: 8:00 a.m.-noon and 1:00 p.m.-8:00 p.m.
  - Saturday & Sunday: CLOSED

- Engineering Library Hours for other times
  - Monday - Friday: 8:00 a.m.-noon and 1:00 p.m.-4:30 p.m.
  - Saturday & Sunday: CLOSED
Faculty Teaching and Research Interests
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Faculty Teaching and Research Interests
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