COLLEGE OF ENGINEERING

Description
Lance C. Pérez, Ph.D., Dean
Sohrab Asgarpoor, Ph.D., Associate Dean for Undergraduate Programs
Website: https://engineering.unl.edu/

Role and Mission
The College of Engineering improves the lives of every Nebraskan. We pursue this vision through our shared values of Community, Impact, and Inclusion. These values are embedded in and strengthened by the academic ideals of the University, the ethos of Nebraskans, and the principles of the entire Nebraska Engineering Community.

Our mission is to drive economic development in the state and region while solving problems of global importance. The College of Engineering will fulfill this mission through our deep commitment to engineering, computing and construction education, research, and engagement. As the only engineering college in Nebraska, we have a particularly strong mandate to the state to ensure our resources and opportunities are accessible to all Nebraskans.

An essential and distinctive pillar of our mission is the notion of the Complete Engineer®. At its most fundamental, the Complete Engineer® is a commitment by the college to the development of every student, staff member, and faculty member in technical, professional, and personal dimensions. It enables each individual to become the best version of themselves in support of the fulfillment of the college’s mission and reinforces the values of Community, Impact, and Inclusion.

Administrative Structure
The College of Engineering is located on three campuses (Lincoln City Campus, Lincoln East Campus, and Scott Campus in Omaha) and has two Dean’s Offices, 114 Othmer Hall in Lincoln and 301 Peter Kiewit Institute in Omaha. The College is subdivided into units, each under the leadership of a chairperson, department head, or director.

Admission
College Admission
College Entrance Requirements
Students must have high school credit for (one unit is equal to one high school year):

1. Mathematics – 4 units: 2 of algebra, 1 of geometry, and 1 of precalculus and trigonometry
2. English – 4 units
3. Natural sciences – 3 units that must include 1 unit of physics and 1 unit of chemistry (chemistry requirement waived for students in construction management or computer science)
4. Foreign language – 2 units of a single foreign language
5. Social studies – 3 units
6. Students having a composite ACT score of 28 or greater (or equivalent SAT score) will be admitted to the College of Engineering even if they lack any one of the following: trigonometry, chemistry, or physics. Students without test scores who are missing a full unit of trigonometry/pre-calculus/calculus or chemistry or physics will be evaluated through College Review.

7. Students having an ACT score of 19 or less in English (or equivalent SAT score) or a grade lower than B in high school English, must take ENGL 150 Writing and Inquiry or ENGL 151 Writing and Argument.

A total of 16 units is required for admission.

Engineering requires that student performance meet one of the following standards: composite ACT of 24, SAT of 1180, ACT Math sub-score of 24, SAT Math sub-score of 580, or a 3.5 cumulative GPA.

Any domestic freshman student who does not gain admission to Engineering but does gain admission to the University of Nebraska-Lincoln will be reviewed through College Review. Any freshman student who is not admitted through college review is placed in Pre-Engineering (PENG) with the Explore Center. Students in the Explore Center have the opportunity to transfer into the college of engineering once college admission requirements are met.

Students for whom English is not their language of nurture must meet the minimum English proficiency requirements of the University.

Students who lack entrance units may complete precollege training by Independent Study through the University of Nebraska-Lincoln Office of On-line and Distance Education, in summer courses, or as a part of their first or second semester course loads while in the Exploratory and Pre-Professional Advising Center or other Colleges at Nebraska.

Students should consult their advisor, their department chair, or Engineering Student Services if they have questions on current policies.

Other Admission Requirements
Students who transfer to the University of Nebraska-Lincoln from other accredited colleges or universities and wish to be admitted to the College of Engineering (COE) must meet COE freshman entrance requirements, have a minimum cumulative GPA of 2.5, and be calculus-ready. Students not meeting either of these requirements must enroll in the Explore Center or another University college until they meet COE admission requirements. Students transferring from UNO, UNL, or UNK to the College of Engineering must be in good academic standing with their institution.

The COE accepts courses for transfer for which a C or better grade was received. Although the University of Nebraska-Lincoln accepts D grades from the University of Nebraska Kearney and the University of Nebraska Omaha, not all majors in the COE accept such low grades. Students must conform to the requirements of their intended major and, in any case, are strongly encouraged to repeat courses with a grade of C- or less.

All transfer students must adopt the curricular requirements of the undergraduate catalog current at the time of transfer to the COE—not that in use when they entered the University of Nebraska-Lincoln. Upon admission to Nebraska, students wishing to pursue degree programs in the COE will be classified and subject to the policies defined in the subsequent section.

Students who were previously admitted to COE and are returning to the College of Engineering must demonstrate a cumulative GPA of 2.5 in order to be readmitted to COE.
Advising

Academic Advising

Advisors assigned to students are either part of the Engineering Student Services located in the Engineering Library or are in the student’s major department.

Student Responsibility

Application for the Diploma

Students are expected to develop a clear understanding of degree requirements and to plan their course of study with their academic advisor. Students requiring clarification of outstanding degree requirements should visit their academic advisor promptly.

Students should access their Degree Audit via MyRED at least once each term to review degree requirements and progress toward graduation. It is the student’s responsibility to make sure their Degree Audit accurately reflects their current College and program of study.

Students who believe their Degree Audit has errors or omissions should visit their academic advisor promptly. It is important that these matters be resolved as soon as practicable to avoid a delay in graduation.

Each student with MyRED access must submit an online Application for Graduation via MyRED for each degree to be received by:

- The fourth Friday in January for May graduation
- The second Friday in June for August graduation
- The second Friday in September for December graduation

Students submitting an electronic Application for Graduation via MyRED will be billed a $25.00 per degree fee on their student account. Those students without MyRED access may apply for graduation in person at Husker Hub in the Canfield Administration Building, or by mail. Applications for Graduation submitted in person or by mail must be accompanied by a check or money order in the amount of $25.00 payable to the University of Nebraska—Lincoln. Failure to submit a timely Application for Graduation may preclude the awarding of a degree in the intended term.

Your Application for Graduation and required $25.00 fee are good only for the term marked on your application. Neither your application nor your fee are transferrable to another term. If you submit an Application for Graduation and pay the $25.00 fee for a specified term but do not complete your degree requirements in that term, you will need to reapply to graduate in a future term and incur another $25.00 fee.

Commencement ceremony information including information about ordering cap and gown can be found at https://commencement.unl.edu. Each student who has applied for graduation must submit an online Commencement Attendance Form via MyRED, which will be available approximately one month before graduation.

Only those students who have applied for graduation, had the application accepted, and fulfilled all degree requirements as of the last day of the academic term may participate in the commencement ceremony for that term. Because the University of Nebraska—Lincoln has a commencement for each term, ceremony participation is allowed only in the term during which the student has properly and timely applied for graduation and fulfilled degree requirements.

Academic Programs & Policies

Honors Program

Honor Societies

These recognize students who excel in scholarship and give promise of being leaders in professional areas. They are branches of national societies and are generally open upon invitation to juniors and seniors: Alpha Epsilon (agricultural engineering), Chi Epsilon (civil engineering, both campuses), Eta Kappa Nu (electrical engineering), Pi Tau Sigma (mechanical engineering), Sigma Lambda Chi (construction management), Upsilon Pi Epsilon (computing and information disciplines https://upe.acm.org/), Sigma Xi (scientific, all colleges), Tau Alpha Pi (engineering technology, Scott campus in Omaha), and Tau Beta Pi (all engineering).

Student Recognition

Graduation with Distinction

GPA requirements for engineering students to graduate with levels of distinction are:

- Distinction: 3.750 – 3.849
- High Distinction: 3.850 – 3.949
- Highest Distinction: 3.950 – 4.000

For engineering students to graduate with Distinction, High Distinction, or Highest Distinction, they must meet the GPA levels listed above, and be approved by a majority vote of the faculty in the department offering their respective academic program. The GPA level is based on the cumulative GPA earned in the semester prior to the semester in which the student graduates.

Student Standing/Classification/Professional Admission

Professional admission to a student’s degree program is a requirement for graduation from that program.

Explore Center Pre-Engineering Students. These are students who aspire to enter the College of Engineering but who are not immediately admitted due to not meeting one or more admission criteria such as required high school mathematics, chemistry or physics course(s), ACT, or other qualifications. These students are admitted to the Explore Center and receive advising services from the Explore Center. These students may enroll in any engineering courses provided they meet the prerequisites on a space-available basis. Once the student has earned a 2.5 cumulative GPA in at least 12 credit hours, and has removed all entrance deficiencies, they will be admitted to the College of Engineering (COE).

After being admitted to the COE, students wishing to pursue degree programs in the College of Engineering will be classified as described below.

Pre-Professionally Admitted COE Students. These are students who have been admitted to the College of Engineering and are in the process of establishing their academic credentials and confirming their choice of major. Transfer students from other colleges and universities or from the Explore Center will be classified as pre-professionally admitted for at least one semester (12 credits) while they confirm their career path and establish their academic credentials (see Professional Admission). Most students are in pre-professionally admitted status for one to four semesters. Pre-professionally admitted students may enroll in upper level engineering courses provided they meet the prerequisites, space is available, and no departmental restrictions exist.
Professionally Admitted COE Students. These students may register in engineering courses where they meet all prerequisites or have permission. A professionally admitted student who wishes to transfer from one COE major to another must re-apply for Professional Admission to gain professionally admitted status in the new major, subject to the admission criteria of the new major.

Students who are enrolled in the Explore Center or in other colleges may enroll in any engineering courses for which they have met the prerequisites. Those with greater than a 2.5 cumulative GPA may register in upper-level engineering courses, but only on a space-available basis in courses where they meet all prerequisites and have permission from the department. These students may retake an engineering course for C-, D, and F removal no more than once, on a space-available basis and with permission. They may repeat courses with a previous withdrawal (W) only once.

Professional Admission must be earned by a student in order to move from pre-professionally admitted status to professionally admitted status within the College of Engineering. Review of the student’s academic history is completed by the department of the student’s intended major after the student has completed at least 43 credit hours within his or her intended degree program. Additional review criteria are based on the individual degree program and can be found under that major’s information in the undergraduate catalog.

A student may be reviewed up to two times for Professional Admission in a single major. If the student is rejected for Professional Admission on the second review, the student will not be allowed to continue in that major. The student may choose to pursue a new College of Engineering major but will be subject to the review criteria of the new major. If the student is rejected for Professional Admission by the new major, the student will be dismissed from the College of Engineering. Further reviews for Professional Admission will not be allowed and the student will no longer be eligible to enroll in College of Engineering courses.

College Probation. A student who receives a cumulative grade point average (GPA) of less than a 2.4 will be placed on college probation. The student will remain on probation until a semester is completed with a cumulative GPA at or above 2.4. Any student with three sequential semesters on college probation will be dismissed from the College of Engineering.

The first semester of probation is defined as the semester in which failure to meet a cumulative or semester GPA threshold, a course failure or withdrawal, or a code of conduct violation occurs.

Completion of the following semester (12 credits) with a semester GPA above 2.4 is required for a student to be removed from college probation. Students may be placed on college probation (or dismissed) for violation of the University of Nebraska–Lincoln Student Code of Conduct at any time. A student cannot graduate from the College of Engineering while on college probation.

College Dismissal. A student will be dismissed from the College of Engineering at the end of any semester in which:

- The student has been placed on college probation for three sequential semesters.
- The student is dismissed by the University of Nebraska–Lincoln.

Students may also be dismissed for violating the University of Nebraska–Lincoln Student Code of Conduct at any time. College dismissal will cause an administrative change in the student’s matriculation to the Explore Center or to a college indicated by the student. Students who have been dismissed from the College of Engineering may be readmitted (one time only) provided they have removed all academic deficiencies that led to dismissal.

General College Policies
These policies are applicable to all students in the College of Engineering:

1. Student priority for entrance into classes for which demand exceeds available class space will be based on accumulative GPA. This priority will be applied at the end of early registration (when applicable).
2. Students may withdraw from a maximum of four engineering courses. Students may withdraw from any one engineering course a maximum of one time.
3. Students may repeat a maximum of three engineering courses. Students may complete any one engineering course a maximum of two times.
4. At least 30 of the last 36 credit hours needed for a degree must be registered for and completed at the University of Nebraska—Lincoln or UNO while identified with the College of Engineering. This means that practically speaking, the last year of a student’s work must be spent in residence. Credit earned during education abroad may be used toward degree requirements if students participate in prior approved programs and register through the University of Nebraska—Lincoln (see http://educationabroad.unl.edu).
5. Pass/No Pass courses: Students in the College of Engineering must take ENGR 10 Freshman Engineering Seminar or CSCE 10 Introduction to CSE, and ENGR 20 Sophomore Engineering Seminar with the grading option Pass/No Pass. Some majors in the College of Engineering also require taking ENGR 400 Professional Ethics and Social Responsibilities with the grading option Pass/No Pass. Outside of these courses, students may take up to 12 credit hours of courses certified as ACE 5, 6, 7, 8, or 9 with the grading option of Pass/No Pass, as long as the major does not require a predetermined engineering course to fulfill the ACE requirement (example, some majors require BSEN/CONE 206 Engineering Economics to fulfill the ACE 8 requirement). Students in the College of Engineering may not take any other ACE category, required, or engineering/technical elective courses with the grade option of Pass/No Pass.
6. Credits for “international students who are non-native speakers of English” at Nebraska and “English as a Second Language” at UNO are not applicable to degree programs in the College of Engineering.
7. Students who enroll at the University of Nebraska—Lincoln, UNO, or UNK under the academic year (Fall, Spring, Summer) of this catalog must fulfill the requirements stated in this University of Nebraska—Lincoln catalog or in any other University catalog which is published while they are enrolled in the College, provided that the catalog is no more than 10 years old at the time of graduation. A student must, however, meet the graduation requirements from one catalog only. A student may not choose a portion from one catalog and the remainder from another catalog.

Undergraduate Seminars. Freshmen engineering students are required to attend ENGR 10 or CSCE 10. The Freshman Engineering Seminar provides information on engineering disciplines, resources and tools available to students at the University of Nebraska—Lincoln, and opportunities to meet engineering faculty members. Sophomore engineering students are required to attend ENGR 20. The Sophomore Engineering
Seminar provides information on career planning, interviewing, resume preparation, and coop/internship opportunities.

**Design Requirement.** All engineering majors require a minimum of 48 credit hours of engineering topics (engineering topics include subjects in the engineering sciences or engineering design). Engineering design is the process of devising a system, component, or process to meet desired needs. Engineering design work may be done by individuals; however, team efforts are encouraged where appropriate. Engineering majors are provided an integrated engineering design experience throughout the curriculum. In addition, all engineering programs include a meaningful major design experience that builds upon the fundamental concepts of mathematics, basic sciences, humanities, social sciences, engineering topics, and communication skills.

**Experiential Learning Requirement.** All undergraduates in the College of Engineering, starting with the 2022-2023 catalog requirements, must complete an Experiential Learning (EL) course. The capstone course for each program is designated as an experiential learning course.

**Catalog to Use**

Students must fulfill the requirements stated in the catalog for the academic year in which they are first admitted at the University of Nebraska–Lincoln. In consultation with advisors, a student may choose to follow a subsequent catalog for any academic year in which they are admitted to and enrolled as a degree-seeking student at Nebraska in the College of Engineering. Students must complete all degree requirements from a single catalog year. The catalog which a student follows for degree requirements may not be more than 10 years old at the time of graduation.

Students who have transferred from a community college may be eligible to fulfill the requirements as stated in the catalog for an academic year in which they were enrolled at the community college prior to attending the University of Nebraska-Lincoln. This decision should be made in consultation with the student’s College of Engineering academic advising team (e.g., ESS professional advisor and the chief faculty advisor for the student’s declared degree program). The chief faculty advisor has the final authority for this decision. Eligibility is based on a) enrollment in a community college during the catalog year the student wishes to utilize, b) maintaining continuous enrollment of at least 12 credit hours per semester at the previous institution for at least 2 semesters, and c) continuous enrollment at the University of Nebraska-Lincoln within 1 calendar year from the student’s last term at the previous institution. Students must complete all degree requirements from a single catalog year and within the timeframe allowable for that catalog year.

**College Degree Requirements**

**Grade Rules**

**Grade Appeals**

In the event of a dispute involving any college policies or grades, the student should appeal to their instructor, and appropriate department chair or school director (in that order). If a satisfactory solution is not achieved, the student may appeal their case through the College Academic Appeals Committee on their campus.

**Degrees & Majors**

**Engineering**

To meet the need for innovative engineers, the College's programs offer a broad education in the physical sciences, social sciences, mathematics, information sciences, and humanities. This education is complemented by a study of engineering methods of modeling, analysis, synthesis, and design in students’ areas of specialization. In addition to preparing students for careers in engineering, the College's bachelor's degree programs provide excellent preparation for graduate study in those fields.

**Construction Management**

This profession is allied with architecture, engineering, and business. Construction managers coordinate people, machines, and materials to produce (within the constraints of budget and time) buildings, highways, bridges, dams, and other structures essential to modern society. The College's construction management program provides a solid technical background, develops business knowledge, and considers ethical issues of the profession.

**Computer Science**

Computer scientists are collaborators, working within teams from other areas of expertise to determine and resolve needs and issues. Students will learn to use and build the tools to make the technology currently being used - and will in the future - work better. Computer science majors learn programming languages and theory that will prepare them for any computing career path.

**Undergraduate Programs**

**Engineering.** The College offers bachelor of science degree programs in each of the following engineering fields: agricultural engineering, architectural engineering (Omaha only), biological systems engineering, chemical engineering, civil engineering, computer engineering, construction engineering, electrical engineering, mechanical engineering, and software engineering. Over 85 percent of all the engineering degrees granted in the United States during the last five years were granted in these fields. Students with interests in specialty fields such as aerospace, environmental, or biomedical engineering should seek advice in the Engineering Student Services Center on how to incorporate such emphases into the above degree programs.

**Computer Science.** The College offers the bachelor of science degree program and a minor in computer science.

**Construction Management.** The College offers the bachelor of science degree program in construction management.

**Dual Degrees.** Students can major in two departments in the college by consulting their advisors (one from each department) and completing all the requirements for the departmental majors.

**Accreditation**

The agricultural engineering, biological systems engineering, chemical engineering, civil engineering (Lincoln and Omaha), computer engineering (Lincoln and Omaha), construction engineering (Lincoln and Omaha), construction management (Lincoln and Omaha), electrical engineering (Lincoln and Omaha), and mechanical engineering bachelor’s degree programs are accredited by the Engineering Accreditation Commission (EAC) of ABET, http://www.abet.org. The software engineering program anticipates full accreditation by the EAC of ABET in July 2022. The master of architectural engineering is also accredited by the EAC of ABET.

**Minors & Areas of Specializations Offered**

College faculty encourage students to minor in a discipline outside the College of Engineering to further develop critical thinking skills, curiosity, understanding of the connections between engineering and the social or natural sciences and fine arts, and sensitivity to ethical issues.
Policies

1. A minor will not reduce or alter the existing course or degree requirements for students electing to pursue a minor.
2. A student’s minor program(s) must be reviewed by an advisor prior to the submission of the senior check to the department chair or head. It is the responsibility of the student to determine that all requirements for the minor are met.
3. The minor(s) must be approved by the cognizant program offering the minor(s).
4. The College of Engineering will follow the “A/B” format of the College of Arts and Sciences in which a student pursuing a single minor must complete the “A” requirements. A student pursuing a double (or greater) minor must fulfill either the “A” or “B” requirements for both minors depending on which plan is offered by the cognizant department.
5. Departments may restrict students in their major(s) from obtaining certain minor(s) at their discretion; see the bulletin entry for individual majors for details.

Graduate Student Information

Courses supporting several engineering graduate programs are offered both on and off-campus. For details, see the University of Nebraska–Lincoln Graduate Studies Catalog and contact the appropriate department or the Office of the Dean of the College of Engineering.

Seniors in this University who have obtained prior approval from the Dean of Graduate Studies may receive up to 12 hours credit for graduate courses taken in addition to their required undergraduate work. However, these credits must be earned within the calendar year prior to receipt of the bachelor’s degree. For procedures, inquire at the University’s Graduate Studies Office. Graduate credits earned prior to receipt of the bachelor’s degree may not always be accepted for transfer to other institutions as graduate work.

Other

Dean’s List

The College recognizes students for academic achievement during the fall and spring semesters by placement on the College Dean’s List. To qualify for the College of Engineering Dean’s List, students must complete 12 credit hours of graded coursework (courses must be started and completed in one semester) by the census date of the grade reports and attain a minimum semester grade point average of 3.500. The following do not qualify as part of the 12 credit hours: Pass/No Pass credit, transfer hours, removals of incompletes, and grade changes submitted after the census grade reports.

Professional Licensure

The College encourages professional licensure. The majority of the College’s engineering seniors take the Fundamentals of Engineering (FE) examination prior to graduation. This examination is administered by NCEES (https://ncees.org/) and is the first step in the process of becoming a licensed professional engineer. To become a licensed professional engineer, one must pass the FE exam, have at least four years of experience, and pass the Principles and Practice of Engineering (PE) Examination, including the Structural Engineering (SE) Exam (https://ea.nebraska.gov/engineer-initial-licensure (https://ea.nebraska.gov/engineer-initial-licensure)). Students may take the FE exam in the last semester of their baccalaureate program.

Practical Training

For a student who anticipates pursuing a career as a practicing engineer, it is strongly recommended that the student engages in an internship or equivalent practical training experience.

Scholarships and Financial Aid

Each year the College awards scholarships to freshmen and upperclassmen worth more than $750,000. Scholarship awards are made possible through generous gifts of alumni and friends, as well as local and national organizations. Contact the Office of the Dean or the Office of Scholarships and Financial Aid for information regarding these awards and for other financial assistance.

Application for University of Nebraska–Lincoln freshmen scholarships automatically makes you eligible for College of Engineering scholarships, as well as other university awards such as the Regents and David scholarships. You must submit the University of Nebraska–Lincoln Application form (due January 15, prior to the beginning of the next academic year) to be eligible.

A significant number of entering students have academic records that qualify them for university-wide scholarship awards. Each year, about 25 percent of the freshman Regent Scholarship recipients are engineering students.

A large number of students are able to find part-time employment in fields related to their interests.

Student Organizations in the College

Technical Societies

The technical student societies help develop greater personal and professional interest and understanding in engineering, computer science, and construction management. Student branches of the major national technical and scientific societies are sponsored by the academic programs and departments.

Lincoln Campus. American Institute of Chemical Engineers; The Society for Engineering in Agricultural, Food, and Biological Systems; American Society of Civil Engineers; American Society of Mechanical Engineers; Associated General Contractors; Association for Computer Machinery; Engineers Without Borders USA; Institute of Electrical and Electronics Engineers; American Society for Metals; Student Advisory Board; Institute of Transportation Engineers; National Society of Black Engineers; Society of American Military Engineers; Society of Women Engineers; and Society of Automotive Engineers.

Lifelong Learning

The education of professionals in construction management and engineering is a continuing process. The groundwork in both technical and non-technical studies is laid while in college, but education continues after graduation. For a professional, education will continue not only in the technical areas but in areas that relate to human and social concerns. A professional may expect to take a leadership role in the community and must have a broad awareness of human and social accomplishments, needs, values, and a willingness to take the responsibility for meeting these needs. For these reasons, an integrated program of coursework in the humanities and social sciences is a part of the educational requirements.