

Employer Handbook

University of Nebraska at Kearney Engineering Internship Program

INTRODUCTON

Students in UNK's engineering foundations program may choose to supplement their education with an internship experience. The internship may take place across the fall, spring, or summer semesters, and the purpose is to provide students with general, professional and applied learning experiences in the engineering industry. The majority of engineering students seeking internships will be in their freshman or sophomore year at UNK, and are either undergoing or have completed coursework in the engineering foundations program (see appendix for course listing).

Many advantages exist for companies in hiring interns. According to the National Association of Colleges and Employers, about 70% of interns pursuing full-time employment will return to the company of their internship upon graduation. Additionally, employers report a 40% higher retention rate among employees hired from their internship programs than those hired through other recruitment methods.

UNK's engineering program is broadly designed to meet the college of engineering requirements at UNL. The engineering foundations program prepares students in math, physics, chemistry and engineering so they can transfer to UNL after their sophomore year. This allows students to study two years at UNK and two years at UNL.

During their time at UNK, students gain a strong background in engineering while taking the recommended general courses in physics, chemistry and math. A student can then move forward to specialize in a wide variety of engineering fields such as civil, electrical, mechanical, chemical or other intensive areas.

HIGH-QUALITY INTERNSHIPS

Many students and employers can be confused at the difference between an internship and a part-time job. **An internship must include specific learning objectives.** The student deliberately sets out to gain knowledge, skill and/or further understanding of the engineering industry. Unlike classroom learning, the student gains this not from lectures, reading, and exams, but from on-the-job experience. For this reason, internships are often referred to as "experiential learning."

In general, there are two aspects necessary for an internship to constitute a high-quality learning experience:

1. **Diverse learning experience** – The internship should be a diverse experience that compliments the student's objective to gain an engineering degree. The position is within the engineering area. Students bring to the internship the knowledge they've acquired through their education while gaining from exposure to several facets of the engineering industry.

2. **Mentoring** – The internship supervisor provides guidance, evaluation, and feedback to facilitate the learning process while also challenging the student. The student and mentor engage in ongoing contemplation of learning objectives throughout the course of the internship.

The National Association of Colleges and Employers has defined internships as having seven essential criteria:

1. The experience must be an extension of the classroom: a learning experience that provides for applying the knowledge gained in the classroom. It must not be simply to advance the operations of the employer or be the work that a regular employee would routinely perform.
2. The skills or knowledge learned must be transferable to other employment settings.
3. The experience has a defined beginning and end and a job description with desired qualifications.
4. There are clearly defined learning objectives/goals related to the professional goals of the student's academic coursework.
5. There is supervision by a professional with expertise and educational and/or professional background in the field of the experience.
6. There is routine feedback by the experienced supervisor.
7. There are resources, equipment, and facilities provided by the host employer that support learning objectives/goals.

So what does this mean for employers and site supervisors? Make sure the learning and mentoring components are primary when planning and managing your internship program.

BENEFITS OF INTERNSHIPS

Employer

- Expose your industry to talented young people
- Work with students eager to learn and apply their skills
- Preview skills and work performances of potential full-time hires (a semester-long interview)

Intern

- Apply classroom knowledge to real world experiences
- Evaluate areas of interest for full-time employment
- Network with experienced professionals

University

- Develop and strengthen partnerships with business and industry
- Gain feedback from industry for program development and enhancement

HOW TO GET STARTED WITH YOUR INTERNSHIP PROGRAM

1. Working in consultation with UNK Engineering Intern and Outreach Coordinator, create a description of the internship (see appendix for sample job description)
 - a. Include the areas where the intern will be training. Assign work activities pertinent to the professional development of the intern. Keep in mind that the internship should be mutually beneficial to both the business and the student. The intern needs a well-

rounded experience exposing them to the many aspects of your industry, including some time shadowing various positions within the organization. Provide the student with at least one special project. (See appendix for examples.)

- b. Include what type of student best fits the job profile (emphasis area/s, coursework completed, skills).
 - c. Include the wage and/or any other support (i.e. housing). Engineering internships are typically paid internships.
 - d. Include a start date, duration of the internship (12 weeks required), and suggested hours worked per week.
 - e. List how to apply for the internship and an application deadline.
2. Submit the internship description to the UNK Engineering Intern and Outreach Coordinator either via email (see sample form in appendix) or by completing the [Internship Posting Request](#). The internship will be advertised to all students in the engineering foundations program that fit the position.
NOTE: We also recommend that you attend UNK's career events in October and February (see UNK Academic & Career Services website for details and to register: <http://careers.unk.edu>).
 3. Interested students will apply directly to the company, typically by submitting a resume and a cover letter.
 4. Interview students. The interview is an important part of the internship experience for the student as they develop and polish the professional skills necessary for obtaining full-time employment. Follow up with the student and/or make offers in a timely manner, typically within two weeks of the interview. It may be an added benefit to the student if you choose to share a critique of their interview, resume, and cover letter.
 5. Students should log their internship with the UNK Engineering Intern and Outreach Coordinator by completing the Student-Employer Internship Contract.
 6. Set a start date. Currently, internships may start and stop at any time during the year but must be for a minimum of 12 weeks.

WORK HOURS REQUIREMENT

Establish the number of hours your student intern will work. During Summer or Winter sessions, students may work additional hours if they are not taking classes. This chart below contains general guidelines to assist employers in designing an internship that balances students' coursework with the hours they are anticipated to work.

Student Course Load	Hours of Internship
No course load	Up to 40 hours per week
12 credits or less	Up to 20 hours per week
15 credits	Up to 15 hours per week
18 or more credits	Not Recommended

COMPENSATION

As a general rule, the majority of engineering internships are paid, particularly if a student is not completing an internship for academic credit.

A valuable source of financial assistance for employers interested in offering internships to Nebraska students is Intern Nebraska. The InternNE Grant Program provides internship guidance and financial assistance to companies in Nebraska who are creating new internships. Go to <http://neded.org/internne> to learn more.

ADDITIONAL RESPONSIBILITIES OF THE EMPLOYER

Once the internship has begun, there are a few other activities required in order to meet the academic component of the internship experience.

- **Student-Employer Internship Contract** – The student intern and the employer will jointly complete the [Student-Employer Internship Contract](#) to be signed and submitted to the Engineering Intern and Outreach Coordinator prior to the beginning of the internship. As part of this, the student will work with the employer to develop a formal training plan (goals for experience). The student will bring the form to the work site with them, make a copy for your records, and then the student will submit the training plan to the Engineering Intern and Outreach Coordinator. Additional sheets may be attached if necessary.
- **Site Visit** – It is the responsibility of the student intern to set up a time for the Engineering Intern and Outreach Coordinator to visit the internship site about halfway through the internship. The Coordinator will visit with the student and their direct supervisor together.
- **Supervisor Evaluation Form** – Complete a final evaluation of the student intern. The student will bring the [On Site Supervisor's Evaluation of Intern](#) form to the work site with them and then will submit it to the Engineering Intern and Outreach Coordinator.
- **Internship Supervisor Exit Survey** – The intern supervisor will complete the online [supervisor exit survey](#) and submit it to the Engineering Intern and Outreach Coordinator upon completion of the student's internship, reflecting on the value of the internship program itself.

ADDITIONAL RESPONSIBILITIES OF THE STUDENT

The student will also complete a couple of other requirements.

- **Student-Employer Internship Contract** – The student intern and the employer will jointly complete the [Student-Employer Internship Contract](#) to be signed and submitted to the Engineering Intern and Outreach Coordinator prior to the beginning of the internship.
- **Site Visit** – It is the responsibility of the student intern to set up a time for the Engineering Intern and Outreach Coordinator to visit the internship site about halfway through the internship. The Coordinator will visit with the student and their direct supervisor together.
- **Supervisor Evaluation Form** – The student will bring the [On Site Supervisor's Evaluation of Intern](#) form to the work site with them and then will submit it to the Engineering Intern and Outreach Coordinator.
- **Internship Exit Survey** – The student intern will complete the online [student exit survey](#) and submit it to the Engineering Intern and Outreach Coordinator upon completion of their internship, reflecting on their experiences during the internship.

KEYS FOR A VALUABLE INTERNSHIP EXPERIENCE

- **Carefully select the intern's supervisor.** Make sure this person is a professional member of your staff who is committed to and capable of developing people. Can this person commit time to administering the intern's program? The supervisor should **meet with the intern** to discuss progress at least once each week. Consider providing the intern with a **mentor** in addition to their direct supervisor.
- **Develop a timeline of learning activities.** This will help the supervisor and intern to have a plan to follow.
- **Introduce** the intern to members of your organization during their first day. Make sure others within your company **recognize the valuable contribution** they are making to the career development of a young professional. On behalf of UNK, please thank your employees for providing valuable experience and guidance.
- Provide the intern with a **well-rounded experience** that exposes them to the many aspects of your business and industry. Make sure the intern has been assigned work activities that are pertinent to their professional development, and also allow the intern to **shadow** various positions including their direct supervisor and positions that are inside and outside of their department. **Minimize time spent working alone.**
- Develop with the intern a **project** which will contribute to their learning experiences as well as benefit the company. (See appendix for examples.)
- Expose the intern to **engineering culture** through company outings and inclusion in a variety of meetings.

PROVIDING A MEANINGFUL LEARNING EXPERIENCE

One of the most detrimental employer errors, and one of the most common intern complaints, is assigning interns responsibilities that do not contribute to a meaningful, diverse learning experience. Some employers may utilize interns for primarily repetitive labor – making copies, running errands, filing papers, answering phones, and even cleaning offices – believing that assigning monotonous tasks maximizes their company's investment by helping them accomplish work that no one else wants to do.

But in truth, assigning interns mostly menial work can have a number of negative effects on your organization:

- It creates disgruntled interns. These interns give negative reports about your program to their peers. Once your internship program gets a reputation for only assigning unwanted work, you will struggle to entice the top student talent.
- It undermines your ability to effectively assess intern skills. Knowing that an intern can organize your filing system doesn't tell you much about their collaboration, problem-solving, or strategic-planning skills. Essentially, you've traded in the long-term benefit of evaluating the intern for full-time employment for short-term gains.

- It cheats you out of the knowledge and insight the intern has to offer. Interns can be a source of novel solutions and new perspectives. You may be missing out on a mind that is full of fresh ideas.

Remember, the primary characteristic of an internship program is a focus on *learning*. Interns are looking for guidance, to gain skill, and to hone their education with hands-on work that will increase their understanding of the engineering industry and prepare them for the workplace. So does this mean you can *never* ask an intern to create a filing system for you? Of course not. As long as the *majority* of work provides a more meaningful learning experience, assigning duties like phones, errands, and filing is completely acceptable.

RECOMMENDED HIRING PROCEDURES

We recommend that your company conduct the following prior to hiring an intern or full-time employee from UNK.

- a. Background check
- b. Drug test
- c. Request and review university transcripts

We suggest that offers contain a statement such as “this offer is contingent upon the results of a background check, drug test, and transcript review.”

ADDITIONAL QUESTIONS

If you have additional questions, please contact:

Laura Jensen, Engineering Intern and Outreach Coordinator
308-865-8001 | jensenla1@unk.edu

For general information contact engineering@unk.edu.

SOURCES

1. National Association of Colleges and Employers, 2011. Position statement on U.S. internships: a definition and criteria to assess opportunities and determine the implications for compensation. www.naceweb.org

ACKNOWLEDGEMENTS

The Employer Handbook for the UNK Engineering Internship Program was closely devised from the UNK College of Business & Technology Employer Handbook, which was written and compiled by Janice Woods, Director of Business Internships & Experiential Learning.

APPENDIX A

COURSES COMPLETED BY UNK ENGINEERING STUDENTS

UNK Courses that students are expected to complete during their freshman year:

- Physics 1
- Physics 1 Lab
- Calculus 1
- English 102
- Speech 100
- Physics 2
- Physics 2 Lab
- Calculus 2
- Intro to Engineering
- Programming in C

UNK Courses that students in the **electrical engineering track** are expected to complete during their sophomore year:

- Social Science
- Circuits 1
- CAD for Mechanical Engineering
- Circuits 2
- Calculus 3
- Math 305
- General Chemistry 1
- Chemistry 1 Lab
- General Chemistry 2
- Chemistry 2 Lab

UNK Courses that students in the **agricultural, civil, or mechanical engineering track** are expected to complete during their sophomore year:

- Social Science
- Statics
- CAD for Mechanical Engineering
- Materials
- Dynamics
- Calculus 3
- Math 305
- General Chemistry 1
- Chemistry 1 Lab
- General Chemistry 2
- Chemistry 2 Lab

APPENDIX B

Sample Job Description

Engineering Corporation
1234 Central Avenue
Kearney, NE 68845

ELECTRICAL ENGINEERING INTERN

Description: Research, develop, design, and test electrical components, equipment, and systems. Perform variety of tasks to support engineering analyses, report production, and designs. Coordinate with other disciplines. Schedule project deliverables. Collect, organize; Individual contributor with no subordinates.

Power Delivery: Perform detailed physical and/or control and protection design for high voltage substation facilities including calculations, specifications and design drawing productions. Substation design experience a plus. Office software and design software.

Electrical/ Controls/ Power Generation: Perform detailed design of auxiliary power systems for large scale utility generation facilities and industrial power distribution systems. Perform calculations including short circuit, load flow, motor starting, protective relaying and arc flash analysis. Provide specification and procurement support of major electrical equipment such as power transformers, medium voltage switchgear, motor control, and relaying systems. Provide construction and start-up engineering support, both in office and on site.

Date of internship: mid-May through mid-August. Hours are M-F, 8 am – 5 pm for 12 weeks.

Requirements and skills: Sophomore in UNK engineering foundations program with an intended emphasis in Electrical Engineering. Analytical skills, Communications skills, both written and oral. Initiative, Self-starter, Highly motivated, Attention to detail, Interpersonal skills. Mathematical skills. Problem solving skills. Computer skills. Coursework in Power Systems is a plus. Minimum 2.75 GPA.

Wage: \$12.00/hour

Application deadline: February 15

To apply, please submit resume and cover letter by email to:

Ms. Jane Smith, Project Manager
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