

# Experiential Education Student Guide

*How to benefit from your internship or co-op experience.*



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# Introduction

Participation in the experiential education program (internships and co-ops) is a great way to gain real world work experience. Internships and co-ops are periods of institutionally supervised, work experiences that supplement formal academic class work. Employers highly value these experiences when evaluating candidates for full-time positions. Students are employed by industry and government organizations in positions related to their major field of study. Unlike a typical part-time or summer job, an engineering internship or co-op must involve the practice of engineering.

Internships and Co-ops are not required by the College, but they are highly encouraged because of the learning and development benefits. To give all students the opportunity to participate, the College has worked to create a barrier-free environment, which includes:

- No defined start date
- No GPA requirement but the student must be in Good Academic Standing
- No tuition or fees charged
- The retention of full-time student status while working



# Benefits

*Experiential education experiences exist primarily for the student development benefits, but employers benefit as well.*

## Some of the Student Benefits Include:

- Enhanced career exploration and clarification of career goals.
- Practical work experience that supplements classroom learning.
- A greater understanding and appreciation of educational needs and objectives.
- An improved ability to apply knowledge and make connections between theory and practice.
- Opportunities to develop interpersonal and group communication skills.
- A greater sense of responsibility, self-confidence, and maturity.
- Professional networking opportunities.
- Employment in an engineering capacity with appropriate compensation that helps to defray college expenses.
- Hours that can usually be counted towards the work experience requirements needed to qualify for a professional engineering license. The co-op or internship must be registered so it is documented on the college transcript.
- Full-time student status is maintained without paying tuition and fees.

## Benefits to Employers Include:

- Opportunities for early engagement with emerging engineering talent with the goal of converting them to full-time employment upon graduation.
- More informed full-time hiring decisions because on-the-job performance is added to the personnel selection process.
- A reduction of training and higher productivity of entry-level hires.
- An injection of creative energy and a transfer of knowledge about state-of-the-art equipment and practices being used at the university.
- Accomplishment of productive work with professional services from students.



# Forms of Experiential Education

*Experiential education work experiences range from multi-term co-ops to summer internships. In the College of Engineering, co-ops and internships are both academic programs and managed exactly the same way. The primary difference is that a co-op involves multiple work terms leading to 12 months or more of work experience at the same company, and an internship results in less than 12 months of work experience at a company.*

## Definitions

*The definitions used to describe the various types of experiential education supported by the College follow. (Please be aware that employers sometimes use different definitions.)*

**Cooperative Education:** Alternating periods of full-time engineering-related work experience and full-time academic course work of approximately equal length. A minimum of two full semesters and one summer of work experience at the same company. Co-ops should not involve two semesters (summer excluded) of back-to-back work experience.

**Engineering Internship:** A single period of full-time engineering-related work experience of at least one semester or one semester plus the summer. Multiple internships should not involve two semesters (excluding summer) of back-to-back work experience.

**Summer Internship:** A single period of full-time engineering-related work experience of at least ten weeks during the summer academic break.

**Parallel Co-ops or Internships:** A student must be enrolled as a half-time student (no more than 6-9 credits) and be employed in an engineering-related work experience that encompasses approximately 20 hours per week. A parallel co-op will be at least two years in duration with the same company and a parallel internship will be at least two part-time semesters in duration or a part-time semester and a full-time summer with the same company.



# How to Find an Internship or Co-op

*Engineering Career Services helps make the connection but the employment relationship is between the student and the employer. There are several ways to search for a position.*

## Utilize CyHire (<https://cyhire.iastate.edu/students>)

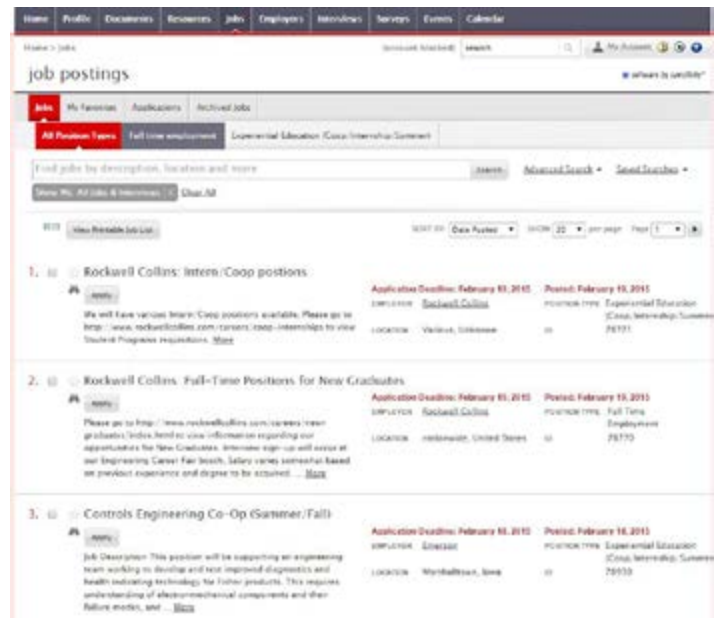
Log in and click on the jobs tab. Here you can search by major and work type (full-time/experiential education). You can also do an advanced search which will narrow your results. This search can be set up to run automatically and regularly email you the results. When you see a posting you're interested in, click on the title or the apply button.

## Attend Career Fairs

Search companies attending the career fair in your CyHire account by clicking on 'Engineering Career Fair' under the Attend Events on the home page. You can also click on the 'events' tab at the top of the page.

## Network and use other Sources

Not all companies recruit at ISU, so network and use other sources. If you land a position using another source, just let Engineering Career Services know and we will work with the company to complete the required paperwork.



***“A dream doesn’t become reality through magic; it takes sweat, determination and hard work.” - Colin Powell***

# Registration

Upon accepting an internship or co-op you will need to register it. It's an easy process and the first step is to complete the employment acceptance form. You can do this on-line through CyPoint at [www.engineering.iastate.edu/ecs/internships/how-to-register/](http://www.engineering.iastate.edu/ecs/internships/how-to-register/). Once you have filled out the form and submitted it, schedule an appointment with your academic advisor to discuss the position. Be sure to bring a copy of your offer letter to this meeting. Once your advisor has approved it, Engineering Career Services will get notification. ECS will then approve the form and send you an e-mail with information to register for the appropriate course.

**The due dates for registration and assignments can be found at:**

<http://www.engineering.iastate.edu/ecs/students/internships/>

# Course Requirements

*Internships and co-ops are “R” credit courses (zero credits) that are graded as satisfactory/fail. There are three easy to complete but important assignments that must be done in order to receive an ‘S’ grade. Assignment instructions will be e-mailed to your ISU e-mail address about two weeks before the due dates. All e-mails will come from [ecscoop@iastate.edu](mailto:ecscoop@iastate.edu).*

## The Three Assignments Are:

**#1) Provide your employment information and a short list of learning objectives for the work experience.** This assignment involves logging into your CyHire account (<https://cyhire.iastate.edu/students>) and completing the sections titled “Student Employment Information, Supervisor Information and Mentor Information.” The process of developing learning objectives is intended to reinforce to you and your supervisor that the primary purpose of the co-op or internship is to develop the skills you need to be a good engineer. In the process of developing your skills, you will complete valuable work for the employer.

### Example Learning Objectives

- Complete stress analysis calculations of model X crane and produce report by August 15th (milestones: Analysis 25% complete by July 5, Analysis 100% complete by July 25th, Draft report complete by August 5th and final report complete by August 15th.) (Primary skill development: project planning, analysis and communication.)
- Prepare an oral report summarizing the project worked on during the internship and present to team. (Primary skill development: Oral communication skills)
- Conduct mechanical testing to determine the tensile strength difference between materials A through E and document data in technical report. (Primary skill development: project planning and management, analysis, quality control, and communication.)

**#2) Complete the OPAL self-assessment.** Near the end of your internship, you and your supervisor will complete the On-line Performance and Learning (OPAL) assessment regarding your demonstration of 15 workplace competencies. Your individual results are only seen by you and should be used to develop a better understanding of your strengths and weaknesses. To get the most benefit from this assessment, it is highly recommended that the results be discussed with your supervisor. The College of Engineering and the departments see the combined results of all experiential education students and use this information for program evaluation and continuous improvement. The OPAL assessment can be found at <https://opal.eng.iastate.edu/>.

**#3) Complete the work experience survey.** This is a short, on-line survey (through CyHire) that provides feedback that the College of Engineering uses to assess your satisfaction with the work experience and identify opportunities for improvement.

## Completing Your Internship or Co-op

An internship or co-op may not be your first job but it will likely be your first engineering-related, professional employment experience. Additionally, these jobs are focused on your learning and professional development. You will learn by completing tasks under the direction of an engineer. The types of tasks and level of responsibility that you receive will depend on your academic classification, your skill set, and the needs of the company.

While the primary reason for the internship or co-op is your development, the company expects their investment in you to be partially offset by the productive work that you perform. The only academic requirements are completion of the three minor assignments mentioned on the previous page. Engineering Career Services and your academic advisor are available to answer questions and address any problems and concerns you may have about your work experience.

The tips on the next page will help you make the most of your experience.



To gain engineering experience, Mechanical Engineering student, Robert Hanson, spent his summer working at the well-known packaged-foods company ConAgra Foods. The internship gave him a good look at the food processing industry and provided valuable perspective that he would not have gained without the internship.

***“There’s nothing better for your education than a professional work experience.”***

***- Robert Hanson (Mechanical Engineering Student)***

# 12 Tips to Getting the Most out of Your Internship

**1. Spend some time developing learning objectives and set personal goals.**

*Make sure your goals are challenging but also realistic.*

**2. Meet regularly with your supervisor to provide progress reports and get guidance and feedback.**

*Your supervisor will likely be a busy person so you may need to initiate the meetings.*

**3. Have a positive attitude.**

*Even when things are not going as planned, remain positive. The optimist Art Linkletter once said, "Things turn out best for the people who make the best out of the way things turn out."*

**4. Complete all your work assignments with enthusiasm and professionalism.**

*Expect to be given some assignments that you don't really like.*

**5. Practice good work habits.**

*Show up for work and meetings on time, complete tasks before the due date, try to accomplish more than is expected of you, and be pleasant to coworkers. Avoid taking part in office politics... nothing good will result from it.*

**6. Learn as much as you can about the company/industry.**

*Take every opportunity to attend company or industry meetings, conferences, and events. These activities are a good way to increase your knowledge, network and build relationships. Don't be afraid to ask to be involved in these activities.*

**7. Don't be afraid to ask questions.**

*An internship/co-op is a learning experience so you're not expected to know everything. Good engineers ask a lot of questions and document the information so they don't have to ask a second time.*

**8. Work on developing networking skills.**

*Making connections and building professional relationships is an important skill for getting work done. The connections you develop may also be useful when it comes time to seek full-time employment.*

**9. Take initiative and volunteer for tasks.**

*Keep an eye out for things that interest you and volunteer to work on projects if you feel you can take on more work. If you find yourself lacking work, identify a project that you feel will benefit the company and seek your supervisor's approval to complete the project.*

**10. Push yourself to venture outside your comfort zone.**

*Don't be afraid to try things you've never done before for fear of making a mistake. These situations often lead to the most growth. Ask your supervisor for guidance and to review your results for accuracy.*

**11. Leave with tangible accomplishments.**

*This will help your resume and help you in future interviews. Keeping a journal will help you remember all the things you accomplished.*

**12. Always say "thank you."**

*Thank your supervisor and the others at the company for investing their time in helping you improve your knowledge and develop your skills.*





# Frequently Asked Questions

## 1. What are the benefits of the Experiential Education Program?

*You will gain practical experience and expertise in a chosen field of employment, earn money to defray expenses and have a competitive edge when obtaining a job upon graduation. (See page 3 for more info.)*

## 2. What is the difference between an internship and a co-op?

*The difference is in the duration of the work experience. Co-ops are several work terms at the same employer that total 12 or more months of work experience. The work terms must alternate with semesters of academic study. Internships are a single work term of at least a semester or ten or more weeks during the summer. Both co-ops and internships are institutionally supervised periods of work experience intended to primarily advance the student worker's academic and professional development.*

## 3. When can students start a co-op or internship?

*Students can start a summer internship after they have completed one semester of coursework at ISU. Some departments require certain core courses to be completed before starting a semester internship or co-op. (Check with your academic advisor.) Most companies hire sophomore, junior and senior students, but some employers hire freshman to establish an early relationship.*

## 4. Will experiential education postpone my graduation?

*Co-ops and semester internships will delay your graduation date, but you do not pay tuition for the semester(s) when you are participating in one of these experiences. The professional development and competitive edge that these experiences give you when seeking full-time employment are definitely worth it.*

## 5. Am I considered a full-time student while working in an experiential education position?

*Yes! Once you have filled out the Employment Acceptance Form, the Engineering Career Services Office will give you information to register for an "R" credit course. There is no tuition or fees assessed when registered for an internship or co-op class. The course is graded satisfactory/fail.*

## 6. How do I register for classes while I'm on an experiential education experience?

*If you didn't receive your RAN number via e-mail, contact your academic advisor. Be sure to update your address through Access Plus to ensure delivery of registration materials.*

## 7. Can a student do more than one experiential education experience?

*Yes, there is no limit on the number of internships a student can complete. If the intent is to work multiple spring or fall semesters at one company, this should be registered as a co-op. Work terms must alternate with academic study (i.e. you cannot work back-to-back spring/fall or fall/spring semesters).*

## 8. Will an experiential education experience enhance my career opportunities?

*Yes! Employers indicate that when interviewing full-time candidates, the two key factors in choosing one qualified candidate over another, is work experience and communication/leadership skills. Acquiring practical work experience gives you the opportunity to gain both.*

## 9. What impact does the Experiential Education Program have on scholarships and financial aid?

*The timing and amount of scholarships and financial aid may be altered. Check with the Financial Aid Office and/or the Scholarship coordinator in the Engineering Student Services Office for specific information. Scholarships are usually just put on hold until the semester you return.*

## 10. How do I find a place to live while out on an internship?

*Housing information can be acquired from the employer.*

## 11. When I return from an internship, will I be able to retain my space in my residence hall?

*You have several options that you can look at to retain space in your current resident hall. It is best that you stop by 2419 Friley Hall to find out more about these options before leaving for your internship.*

*FAQ continued on next page.*

## Frequently Asked Questions (Cont.)

**12. Can I still participate in an Experiential Education Program if I have already registered for the next semester?**

*Yes! Fill out the Employment Acceptance form at <http://www.engineering.iastate.edu/ecs/students/internships/how-to-register/>. Schedule an appointment with your academic advisor. Your advisor will approve your form and send it to Engineering Career Services for final approval. At that time, we will have you drop your other classes.*

**13. Am I obligated to work for the company after graduation?**

*No, neither students nor employers are obligated to continue the employment relationship after graduation. However, many students are extended offers of full-time employment when they graduate.*

**14. Can I do an internship or co-op with an employer that does not recruit at ISU?**

*Yes. As long as the position you have accepted is related to your major and we have the company read and sign our expectations form with the Engineering Career Services Office. Once this is done, then you can fill out the necessary paperwork to get registered.*

**15. Can I live at home and participate in the Experiential Education Programs?**

*Yes! However, this may limit your options. We recommend that you remain flexible in your willingness to relocate and look at industry and job content first.*

**16. Will I be able to pay for college expenses through an experiential education experience?**

*Engineering internships and co-ops generally pay well and should help with college expenses. The level of contribution will depend upon your salary, living expenses, and money management skills.*

**17. How much can I expect to earn in an experiential education position?**

*Salary information can be found on our web site at <http://www.engineering.iastate.edu/ecs/employers/salaries-demographics/>*

**18. Where can I find an experiential education position and where can I expect them to be located?**

*Our employers come from all over the United States. You can view open positions through CyHire or by talking to employers at our two career fairs.*

**19. Can international students be involved in the Experiential Education Programs?**

*Yes, but some employers require U.S. citizenship, permanent residency, refuge, or temporary resident status for participation; therefore, opportunities may be limited.*



# PE License Considerations

*One of the many benefits that a formal internship or co-op experience offers engineering students is the ability to apply the work experience toward professional licensure.*

The normal path to a PE license involves: 1) taking the Fundamentals of Engineering (FE) Examination during the senior year of college, 2) graduating from a four-year, ABET accredited, engineering program, 3) start working and accumulate four years of engineering experience, and 4) take the Principles and Practice of Engineering (PE) Examination (in this order).

It is generally required that all of the engineering experience be accumulated after graduation. However, if a student has worked while studying to be an engineer, and if the work meets the criteria for qualifying experience, the student may qualify to take the PE Examination in less than four years after graduation. It is important that the candidate be able to show that the pre-graduation experience constitutes qualifying engineering experience (see below).

When a student enrolls in an ISU College of Engineering Experiential Education course, it is our intent that they will be provided with work experience that meets the criteria list below. Additionally, completion of the course is listed on the student's transcripts to provide documentation of the institutionally-supervised work experience. Students that do not register their summer internships with Engineering Career Services will not have this documentation and may not be able to show that their internship consisted of qualified work experience.

## Qualifying engineering experience:

- Should be from a major branch of engineering in which the candidate claims proficiency.
- Must be supervised. That is, it must take place under the ultimate responsibility of one or more qualified engineers. Generally qualified engineers must be licensed professional engineers. However, some jurisdictions will accept experience supervised by a qualified unlicensed engineer in industry situations where there is no offering of engineering services to the public.
- Must be of a high quality, requiring the candidate to develop technical skill and initiative in the application of engineering principles and sound judgement in viewing such applications by others. The experience must be of a nature that the candidate develops the capacity to assume professional responsibility to engineering work.
- Must be broad enough in scope to provide the candidate with a reasonably well-rounded exposure to many facets of professional engineering. Along with highly specialized skill in a particular branch of engineering, the candidate should acquire an acceptable level of competence in his or her basic engineering field, as well as the accessory skills necessary for adequate performance as a professional.
- Must progress from relatively simple tasks with less responsibility to work of greater complexity involving higher levels of responsibility. As the level of complexity and responsibility increases, the candidate should show evidence of increasing interest in broader engineering questions and continuing effort toward further professional development and advancement.

## Reasons to get Licensed

**Authority:** Only PEs can sign and seal engineering drawings; and only PEs can be in charge of a firm in private practice or serve as a fully qualified expert witness. Also, many government agencies and educational institutions are emphasizing licensure among their engineers as well.

**Prestige:** PEs are respected by the public and are seen in the same light as licensed professionals in other fields.

**Career Development:** Employers are impressed with engineers who have their PE license. Licensure not only enhances your stature, it shows commitment to the profession and demonstrates heightened leadership and management skills. Licensure is also a necessity for rising to increased levels of authority and responsibility.

**Flexibility:** Having a PE license opens up your career options. You can become a specialist, or establish your own business. It also protects you during industry downsizing or outsourcing. The PE license allows you to go as far as your initiative and talent will take you.



# Help Spread the Word About Co-ops and Internships, and Give Your Employer Exposure

## ***Participate in the Internship Shout-Out Program***

Each semester, Engineering Career Services arranges for interns to tell classmates about their work experience and encourage others to participate. If you would be willing to make a 10 minute presentation to a class when you return to campus after your internship, please express this interest in an e-mail to [ecscoop@iastate.edu](mailto:ecscoop@iastate.edu).

## ***Submit Photos***

We love to see pictures of students in the workplace and we use these images when talking about the experiential education program. With the permission of your employer, have a few photos taken of you that is representative of your internship or co-op. Like the photos in this guide, make sure the photos show your smiling face and you doing something related to your internship. Give the company a little exposure by including their product and/or logo in the image. Simply e-mail the images with a short description to [ecscoop@iastate.edu](mailto:ecscoop@iastate.edu).



## **About Engineering Career Services**

**4th Floor Memorial Union  
Ames, IA 50011  
Phone: 515-294-2540  
E-mail: [ecs@iastate.edu](mailto:ecs@iastate.edu)**

Engineering Career Services is dedicated to helping ISU engineering students and alumni plan, prepare for, and launch successful careers; and to help employers connect with ISU's great engineering talent. We are dedicated to equal employment opportunity and follow the guidelines established by the National Association of Colleges and Employers.

ECS offers a number of workshops each semester and on topics such as developing an effective resume, job search strategies, interview preparation and getting the most out of an internship. ECS staff members are also available for one-on-one advising and appointments can be made through CyHire.

See our website for more educational information, workshop schedules and other information.

[www.engineering.iastate.edu/ecs](http://www.engineering.iastate.edu/ecs)

