ISE Internship/Job Search Guide

For Undergraduate Industrial & Systems Engineering Students

Fall 2011
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1. Introduction

This publication is intended to be a guide for you as an undergraduate student in the Systems Science and Industrial Engineering Department's Bachelor of Science in Industrial & Systems Engineering (BS ISE) program.

In addition to the ISE 295 Seminar course, this guide should give you resources for enriching yourself in preparation for entry into industry or continuing education as an engineering professional.

In today's dynamic and fast-paced economy, it is wise to start early for the undergraduate BS ISE student to begin thinking about his or her career. If you have not already started to act on establishing yourself as a force in the professional world, now is the time. You are encouraged to use this guide and the resources contained within to prepare for success.

Whether you are seeking an internship, considering the possibility of graduate studies, or of obtaining a job, this guide can help you.

As you will see from the table of contents, this guide is designed to give you insights in the areas of:

- Internships
- Graduate School
- Jobs in Industry
- Resources
  - Academics
  - Career Development Center
  - Internships & Careers
  - Professional Organizations
  - International Students
- Plus more

If you need help with ideas for what you could be doing as an undergraduate we recommend that you consult the Career Development Center's, “Career Planning Guide” to help you get started and organized. [http://www2.binghamton.edu/career-development-center/quick-reference-guides/career-planning-guide.pdf](http://www2.binghamton.edu/career-development-center/quick-reference-guides/career-planning-guide.pdf)

Any and all questions or inquiries regarding anything contained in this guide should be directed to your class advisor. Please see section 4.1, BU-Specific Academic Resources, for appropriate contact information.

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2. **Internships**

2.1 **Importance**

Internships:
- provide valuable experience that will aid in getting a job directly or indirectly in the future
- connect students with industry experts, many of whom have been honing their skills for decades
- allow students to become accustomed to industry technically, culturally, and socially
- provide an arena for networking within industry
- can lead to more opportunities, including a full time position upon graduation

Having internship experience on your resume will look impressive to employers. Many employers would much rather hire a candidate with real industry experience than one with only classroom knowledge of a subject area.

The Career Development Center has an internship guide called, “Internships: Opportunities for Exploration and Experience” that will help you navigate the internship process.

http://www2.binghamton.edu/career-development-center/quick-reference-guides/Internships.pdf

2.2 **Internship Resources**

- Speak with SSIE Department professors
  - Professors may be looking for students for internships with employers with which they have a professional relationship. Professors have networking in industry that can point you in the right direction (e.g. which companies you should apply to that may be looking for interns)
  - The department holds lecture sessions with representatives from top companies in industry (such as IBM). Pay attention and respond.
- Contact local companies and inquire, even if they do not have any postings online
  - It can’t hurt to ask, and you never know what the outcome may be
  - Even if a company is not looking for interns at the time, they may be in the future, or they may keep your resume on file for future employment considerations
- Networking
  - Attend department/professional society events such as speakers, thesis defenses, job fairs, etc.
  - Make yourself known to people from industry or academia at these events
• LinkedIn is a great way to build your professional social network; add the people that you meet to your connections list on LinkedIn

• Join the SSIE Alumni LinkedIn Group page <http://www.linkedin.com/groups?gid=2341987> to stay networked with others affiliated with the department

• Online Recruiting

  • eRecruiting <http://binghamton.experience.com> offered through the Career Development Center, is a robust system that lists internships and job openings.

  • Many (some very prominent and successful) employers list positions on eRecruiting because they know BU graduates are great candidates

  • There is no cost to current matriculated student. Alumni can continue to use eRecruiting for a $10 yearly fee.

  • If you need help with eRecruiting visit the Career Development Center. They are glad to be of service.

• Career Development Center <http://cdc.binghamton.edu>

  • Located in LSG 500 (Career Development Center South) and LNG 300 (Career Development Center North) and online

  • Provides valuable tools such as resume help, mock interviews, and other helpful career resources

  • Hosts many on-campus events (workshops, job fairs, speakers, etc.)

• Internship & Job Fairs

  • When: Every Fall and Spring; check the Career Development Center website for more information

  • Location: BU Events Center. To learn more about and see what the on campus job fairs look like check out the following link on You Tube: http://www.youtube.com/watch?v=-LLefTHVZYY

  • Make a positive impression when speaking to recruiters at a job fair by organizing and practicing your introduction. This is often called an “30 second commercial.” The following will help you prepare:  http://www2.binghamton.edu/career-development-center/pdf/Perfecting%20Your%2030-second%20commercial.pdf

• Many employers specifically seek ISE’s for internships and jobs

  • Amphenol Aerospace Operations, Argus Information and Advisory Services, BAE Systems, Bloomberg LP, Frito Lay, Inc., Global Foundries, ITT Corp,
Microsoft Corporation, SoftNice, Inc, Telephonics Corporation, The Raymond Corporation (Fall 2010 attendees)

- Many also hire all majors

- Career Development Center/Watson Advising e-mails
  
  - May contain pertinent up-to-date information regarding career-related events, company speaker presentations, workshops, etc.
  
  - Make sure these messages do not get filtered into your e-mail’s spam folder; they may enable you to network with a valuable career resource at an advertised event

### 2.3 Types of Internships

Unlike most other majors, many engineering internships are paid. In the case that a particular internship is not, however, it is most likely eligible to count for credit (as a technical elective). Paid internships are also eligible to count for credit. Speak to your class advisor for more information regarding internship requirements for credit.

Most internships are available for the summer months. Some employers are willing to pay relocation expenses for interns in the event they do not live in the area of the internship. If you do not want to relocate for the summer for an internship, consider internships in the Binghamton area or in your hometown. For a list of local employers see section 7, Local Employers.

There may be research internship opportunities available with the Watson Institute for Systems Excellence (WISE). The SSIE Department works very closely with WISE, a well-established research group headed by Watson School Dean and former SSIE Department Chair, Dr. Krishnaswami Srihari. These are limited opportunities for undergraduates, are competitive, and typically awarded to seniors. If you are interested in learning more about this opportunity, speak to Dr. Nagen Nagarur, Dr. Sarah Lam or Dr. Mohammad Khasawneh for more information.

There are also some internships available during the regular semesters. These types of internships generally require ten to twenty hours of work per week and schedules can be flexibly built around your class schedule; after all, the employer (and/or WISE) wants their intern to succeed in school so more knowledge can be gained that may be applicable to your work as an intern.

In lieu of a traditional internship, a professor within the department may have an unpaid research position that needs filling. Professors often need assistance with projects of their own. Working as a research assistant for a professor will help you gain valuable experience much like an internship and can also assist in building a lasting bond with that professor.
2.4 Resume for Internships

A resume is a summary of your professional experience, education and skill sets. It is your advertisement to prospective organizations to which you apply. When applying for internships, it is very important to have a good resume that stands out to potential employers. Make sure you list your areas of expertise and skill sets.

At this stage in your professional career, you may have little direct experience, but perhaps you have some non-engineering experience. In lieu of work experience in an engineering capacity, make sure your resume includes information related to any projects from technical class, club, engineering society, or organization positions. Any freelance work you may have done or positions that involved any leadership or management responsibilities should especially be listed and outlined in a way that shows you can be taken seriously in an industrial environment.

If your search for an internship is the first occasion that has required a resume, make sure you obtain the proper guidance from either the Career Development Center, use their resume guide to write your resume: [http://www2.binghamton.edu/career-development-center/quick-reference-guides/resume.pdf](http://www2.binghamton.edu/career-development-center/quick-reference-guides/resume.pdf) or another trusted source so that you can start your professional career off right. What you may think is a good resume may not be appropriate; experienced people can point out things you had never considered.

2.5 Cover Letters for Internships

A cover letter is a letter of introduction that accompanies your resume that links the resume with the job description. It allows you to explain why you are suitable for the position for which you are applying, including past experience, qualifications, skills, and relevant certifications. Any special considerations regarding your start date should also be mentioned.

It is recommended to send a cover letter with each job application you submit. Some employers require a cover letter, while some do not. Follow the directions of the internship listing if a cover letter is desired by the prospective organization.

The Career Development Center’s guide to writing cover letters can be found at [http://www2.binghamton.edu/career-development-center/quick-reference-guides/cover-letter.pdf](http://www2.binghamton.edu/career-development-center/quick-reference-guides/cover-letter.pdf).

For even more assistance regarding cover letters, visit the Career Development Center’s cover letter webpage at [http://www2.binghamton.edu/career-development-center/students/undergraduate/resumes-cover-letters-interviews/writing-cover-letters.html](http://www2.binghamton.edu/career-development-center/students/undergraduate/resumes-cover-letters-interviews/writing-cover-letters.html).
2.6 Search Tips
Searching for an internship is not always easy and must be done well. Here are some tips to keep you on track during your search.

**Have a carefully constructed and appealing resume to give to employers.** A sloppy resume (misaligned margins, bullets, misspellings, etc.) makes a poor impression and will make you less competitive. Make sure your resume is substantively and aesthetically pleasing and makes a professional impression. Consider taking your resume to the [Career Development Center](#) for review.

**Brush up on the topics from courses that may be relevant to the internship.** After having done some research on the company to which you are applying and its industry, you should have a good idea of which topics and techniques you have learned during your studies that will apply to the position. If you aren’t certain, ask a professor or other advisor for assistance. Go back to those topics in your course literature (or elsewhere) to refresh your memory.

**Learn about the company to which you are applying and the industry to which they belong.** Employers want potential interns to have a vested interest in them. Doing a sufficient amount of research into the employer will give you a reference point for conversation during an interview and will increase your own personal knowledge of the industry.

**Carefully prepare for your interview.** Practice sample interview questions, or even sign up for a mock interview with the [Career Development Center](#). Read the Effective Interviewing guide to prepare for your interview: [http://www2.binghamton.edu/career-development-center/quick-reference-guides/effective-interviewing.pdf](http://www2.binghamton.edu/career-development-center/quick-reference-guides/effective-interviewing.pdf) A great interview can leave an employer with a good feeling about you and greatly enhance your ability to get the internship you seek.

**Be open-minded.** Apply to internships that you think you may not be interested in. If you hear back from an employer, they may share some exciting new information which makes the position more attractive.

2.7 Interview
The interview process provides an employer with an opportunity for a much deeper understanding of you, the internship candidate. During an interview, an employer judges your responses to certain types of technical and/or social/managerial questions, in addition to the traditional list of questions. Some hypothetical situations may be presented in which you must explain what your course of action would be. There are a number of different techniques used by interviewers to gauge candidates.

First impression is everything. It is extremely important that you are on time for your interview.
In addition to being on time, you must also be dressed appropriately. Engineering firms and departments are traditionally fairly conservative. Business/professional attire for interviews is strongly recommended.

Any friends or acquaintances you have who are already employed at the company or who have left on good terms should be mentioned; the employer will most likely contact them to verify your eligibility for the position and for feedback on your character.

Within 48 hours after the interview, it is important to send a thank-you letter to the interviewer for the time they took to consider you for the position.

For more information on interviewing for internships and jobs, read the Career Development Center's Guide to Effective Interviewing at <http://www2.binghamton.edu/career-development-center/quick-reference-guides/effective-interviewing.pdf>.

### 2.8 Making the Most of It

While working as an intern, do not forget the whole purpose of getting an internship in the first place: to gain valuable experience and apply knowledge gained during coursework to real-life situations in an effort to advance your career.

These tips can help you make the most out of your internship experience:

1. Set Personal Goals
2. Create an Immediate and Lasting Strong Impression
3. Have Regular Meetings with your Supervisor(s)
4. Tackle all Tasks with Enthusiasm and a Positive Attitude
5. Be Positive and Avoid Negativity
6. Always Take an Opportunity to Learn More About the Company/Industry
7. Don't be Afraid to Ask Questions. It shows interest in the company or project.
8. Take Initiative – Be willing to take on new assignments and projects.
9. Find a Mentor
10. Network, Network, Network
11. Leave with Tangible Accomplishments
12. Keep a diary of work/activities you performed and/or were involved in
13. Enjoy Yourself

3. **Beyond Undergraduate Studies**

3.1 **Graduate School**

3.1.1 **Overview**

There are many reasons why people go to graduate school; some do because they have a genuinely deep interest in the subject area and want to learn as much as possible, while some are less motivated by passion and more motivated by the hope that a master’s or doctorate degree will aide them greatly in their professional advancement. Whatever the reason, the choice to continue your studies and pursue a graduate degree is one that should be carefully considered. Please note that acceptance into graduate programs generally requires the completion of the Graduate Records Examination (GRE). [Click here](#) for GRE information.

3.1.2 **Opportunities at BU**

For students graduating with a Bachelor of Science in Industrial & Systems Engineering, a number of opportunities exist right here at Binghamton University.

If students wish to stay within the SSIE Department, they can pursue either the MS in Industrial & Systems Engineering or the MS in Systems Science. Usually it takes three to four semesters to finish a master’s program with a thesis option. In addition, a 5-year “4+1” fast-track program is available for students who meet qualifications. You may want to contact the program’s Graduate Director to discuss the possibility of waiving the GRE requirement prior to enrolling in the program.

The MS in Industrial & Systems Engineering program builds upon the groundwork laid in the undergraduate ISE curriculum and delves deeper into the endless applications of industrial and systems engineering principles. For more information, contact the Director of the MS ISE program, **Dr. Sarah Lam**.

The MS in Systems Science program "provides the student with systems concepts, principles, and methods that help develop the ability to understand the nature of systems problems, as well as proficiency in actual systems problem solving."¹ More general and sometimes more theoretical than industrial & systems engineering, systems science focuses on the study of the system as a phenomenon observable in many different contexts ranging from natural to man-made. For more information, contact the Director of the MS SS program, **Dr. Harold Lewis**.

The SSIE Department also has PhD programs in Industrial & Systems Engineering and Systems Science. Those who obtain PhD’s in either of these disciplines usually work toward an industry job or teach at a university. For more information about the PhD programs, speak to **Dr. Sarah Lam** or **Dr. Hal Lewis**.

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¹ See SSIE Department Fact Sheet <http://www2.binghamton.edu/watson/programs/academic-departments/systems-science-and-industrial-engineering/academic-programs/Department%20fact%20sheet.pdf>
The SSIE Department works very closely with the Watson Institute for Systems Excellence (WISE), a well-established research group headed by Watson School Dean and former SSIE Department Chair, Dr. Krishnaswami Srihari. Superior performance during your undergraduate and/or graduate studies may result in being considered for a position in WISE as a Graduate Research Associate. For more information, speak to Dr. Mohammad Khasawneh, Dr. Sarah Lam or Dr. Nagen Nagarur. See section 4.1, BU-Specific Academic Resources, for contact information.

The areas of research focused on in the SSIE Department include:

- **Systems Science**
  - Fuzzy Logic
  - Data Analysis and Knowledge Discovery
  - Uncertainty Theories
  - Generalized Information Theory
  - Soft Computing
  - Intelligent Control and Robotics
  - Decision Making
  - Complex Systems

- **Industrial and Systems Engineering**
  - Quality
  - Reliability
  - Simulation
  - Manufacturing
  - Health Care Systems
  - Human Factors and Ergonomics
  - Computer Integrated Manufacturing
  - Electronics Packaging and Manufacturing
  - Artificial Intelligence and Expert Systems
  - Supply Chain Modeling and Management
  - Neural Network Modeling & Data Mining
  - Manufacturing Process Control and Design
  - Applied Statistics and Design of Experiments

The faculty research matrix for professors in the SSIE department can be found at <http://www2.binghamton.edu/watson/programs/academic-departments/systems-science-and-industrial-engineering/research/matrix.html>. This matrix can aid you in identifying professors to consult with regarding your research interests.

In addition to these established programs at BU, there are many more graduate degrees and opportunities available to you outside of those traditionally pursued by I.S.E. graduates. Visit the BU Graduate School website <http://www.binghamton.edu/grad-school/> for additional information.
Obtaining an M.B.A. (Master of Business Administration) degree from the School of Management (SOM) is also an option. The SSIE Dept. and SOM together offer a 5-year “4+1” B.S + M.B.A. program for those interested who meet qualifications.

3.1.3 Opportunities at Other Institutions

There exist many opportunities at other institutions of higher learning for students who are looking to advance their studies elsewhere. Though all major universities with industrial or industrial & systems engineering curricula must meet ABET qualifications, each university tends to take its own unique spin on the discipline. Some common specializations are manufacturing, systems engineering, applied operations research, human factors, and health systems.

Many universities offer advanced degrees in closely related disciplines such as operations research, quality engineering, process engineering, and supply chain management. Graduates of the BS ISE program should not feel discouraged from applying to these programs, as they will be more than qualified to undertake the work required in them.

Schools in New York State that offer graduate-level degrees in industrial engineering and/or related disciplines are:

- Cornell University, Ithaca – [http://cornell.edu](http://cornell.edu)
- Polytechnic Institute of NYU, Brooklyn – [http://poly.edu](http://poly.edu)
- SUNY Buffalo, Buffalo – [http://buffalo.edu](http://buffalo.edu)
- Columbia University, New York City – [http://columbia.edu](http://columbia.edu)
- Rochester Institute of Technology, Rochester – [http://rit.edu](http://rit.edu)

U.S. News & World Report ranked the top schools for Industrial/Manufacturing Engineering in 2010. The top schools are:

- Georgia Institute of Technology, Atlanta, GA – [http://gatech.edu](http://gatech.edu)
- University of Michigan – Ann Arbor, Ann Arbor, MI – [http://umich.edu](http://umich.edu)
- University of California – Berkeley, Berkeley, CA – [http://berkeley.edu](http://berkeley.edu)
- Northwestern University (McCormick), Evanston, IL – [http://northwestern.edu](http://northwestern.edu)
- Pennsylvania State University (Penn State) – University Park, University Park, PA – [http://psu.edu](http://psu.edu)
- Stanford University, Stanford, CA – [http://stanford.edu](http://stanford.edu)
- Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, VA – [http://vt.edu](http://vt.edu)
- Cornell University, Ithaca, NY – [http://cornell.edu](http://cornell.edu)
- Texas A&M University - College Station (Look), College Station, TX – [http://tamu.edu](http://tamu.edu)
- Purdue University – West Lafayette, West Lafayette, IN – [http://purdue.edu](http://purdue.edu)
- University of Wisconsin – Madison, Madison, WI – [http://wisc.edu](http://wisc.edu)
Conduct your own research to find the institution and program that fits your educational and personal needs.

3.2 Jobs in Industry
As industrial and systems engineers, we are called upon by enterprises to design and implement solutions to problems regarding all types of resources, including but not limited to human resources, money, materials, and machines. Thanks to our diverse skill set, there will always be jobs out there for us as long as we maintain our integrity and keep ourselves educated in one way or another.

You may find yourself with the challenge of not knowing which particular industry to go into; whichever you choose, be ready to adapt your general, yet specialized, skill set obtained through the BS ISE program to any situation that may arise.

3.2.1 Common Industries for ISE Majors
Industrial & systems engineers exist in virtually all industries in a number of capacities. Opportunities can be found in non-profit, government, and for profit organizations.

The most common industries that actively hire industrial & systems engineers are:

- Manufacturing
- Health care
- Automobile
- Defense
- Finance

There is a place for industrial & systems engineering in systems as small as a fast food restaurant and as large as an aircraft carrier. The list above is not intended to limit you in your search for a job in industry. Different industries may have different names for us, but all industries can use industrial & systems engineers in some capacity.

3.2.2 Common Job Titles for ISE's
Industrial & systems engineers can pursue a variety of roles in a variety of companies. Some of the common titles for individuals with an ISE background are:

- Industrial Engineer
- Systems Engineer
- Manufacturing Engineer
- Process Engineer
- Quality Engineer
- Scheduling/Planning Engineer
- Health Systems Engineer
- Project Engineer
- Management Engineer
- Performance Improvement Administrator
- Human Factors Manager
- Supply Chain Analyst
- Operations Analyst
- Systems Analyst

Different companies may use different terms for the same basic position depending on their focus, or perhaps for arbitrary reasons. Nevertheless, do not hesitate to apply to a position
that may have an unfamiliar title if the skills required for the position seem to align with yours.

3.2.3 Resume/Cover Letter Writing

Your resume is a summary of your professional self. This one-two page advertisement is your way of introducing yourself to potential employers by outlining your skills, abilities, education, and how you would “fit” into their work environment. Many applicants apply for the same position; your resume must stand out amongst these hundreds or even thousands of applicants.

A candidate for a job may have exceptional work experience, but a poorly constructed resume may disqualify the candidate from the running; conversely, another candidate may not have the most experience, but their resume may be constructed in such a way that piques an employer’s interest and shows the candidate’s level of professionalism. A well-constructed cover letter and resume must be completely truthful and consistent; exaggerations and falsehoods will be detected by employers and will have serious negative consequences for you.

It is important to always keep your resume current. You never know who you may network with who wants a copy of your resume; do you really want to have to spend time updating it with what you’ve done in the past 6 months, or would you rather just go home and send it to them quickly? Moreover, keeping an up-to-date resume stored on recruiting websites (company-specific, eRecruiting, etc.) can keep the most recent professional “version” of you present on the web at the disposal of various employers, who may choose to contact you regarding an available position immediately or to keep you on file for consideration at a later date.

An e-mail address that is plain and professional (e.g. yourpodsusername@binghamton.edu) is strongly recommended to be used on your resume and cover letter. If you must create one for the purpose of applying for jobs, then do so.

While a paper resume is the traditional norm, job recruiting sites also have their own resume formats used to make searches by employers easier. In addition to having your standard paper-format resume (in Word or PDF format) uploaded on these sites, you should also adapt it to the format used by the particular recruiting website you are using.

Think of your resume as an advertisement for your product if your product were yourself; you are trying to advertise your product using many media, like a company may advertise using both television commercials and billboards.

There are countless resources available for help with constructing a great resume. Two great ones are:

• Career Development Center Guides to Resume and Cover Letter Writing
  ○ [http://www2.binghamton.edu/career-development-center/quick-reference-guides/resume.pdf]
3.2.4 Job Search Resources
A number of avenues exist for finding available positions that are worth applying for.

Recruiting websites are the most prominent method used by employers in finding potential candidates for jobs and by potential candidates in finding positions. Most sites today offer the ability to create an account and store your resume for search by employers, so that you do not always have to be actively on the hunt for a job (though being proactive is strongly recommended). Some popular recruiting websites are listed in section 4.2 of this guide.

As a current student or an alumnus, remember to use BU’s eRecruiting site as explained in section 4.2.

Another great method for finding jobs is by going to the websites of particular employers. The vast majority of employers have their own career websites (often ending in the “.jobs” web address extension, e.g. http://ibm.jobs) on which they post job listings as soon as the associated positions become open.

Traditionally, jobs would be listed in newspapers; though the newspaper industry is declining and newspapers as a medium of professional and personal networking is falling out of prominence, some employers still post ads in newspapers.

In addition to these methods, speaking with professors at BU and at institutions you may have attended in the past may provide you with great opportunities. If you know any BU alumni or other contacts obtained through various types of networking, do not hesitate to reach out to them – that’s what they are there for! Staying connected socially to the SSIE department faculty and alumni will prove to be a great asset.

3.2.5 The Job Search Process
It has been said that finding a job is a job unto itself. Indeed, the job search process can be a very daunting task. However, you should not let it discourage you. Being proactive, taking advantage of all possible opportunities for networking and marketing of yourself, and keeping track of your progress is a recipe for success.

It is important to keep a log of the jobs you apply for. The log should include the company to which you're applying, the title of the position to which you're applying, the date you applied to the position, and any other information or notes that you deem applicable such as salary or location. For those students who apply for jobs in eRecruiting, a record of who you apply to will be available on the system.

Some employers explicitly state their policy on following up with them (e.g. they will call you back within two weeks). If a policy is stated, follow it; if not, it is safe to call or e-mail back after a few weeks to a month to politely inquire as to the status of your application.
It is important to stress that honesty is always the best policy, especially with regards to job applications. An employer will know or find out if you have lied or stretched the truth beyond belief. It is important that we, as engineers, maintain ethical practices at all times. For example, in math terms one can round 3.69 to 3.7; however doing so on a resume should be avoided since a recruiter could consider an innocent rounding for misrepresenting ones GPA.

While this may seem trivial, the use of “ringback” tones and/or having an incoming voicemail recording that is unprofessional can only be detrimental to you should an employer choose to call you regarding a position for which you have applied.

3.2.6 Job Interview Tips
The following resources from the Career Development Center contain useful tips for interviewing:

- Preparing for your Interview
  - [http://www2.binghamton.edu/career-development-center/students/undergraduate/resumes-cover-letters-interviews/preparing-for-your-interview.html]
- Interview Tips & Advice
  - [http://www2.binghamton.edu/career-development-center/students/undergraduate/resumes-cover-letters-interviews/interviewing-tips.html]

4. Resources

4.1 BU-Specific Academic Resources
Thankfully, BU has a number of academic resources for its students. These resources are already available for you to use. The individuals who advise students in the SSIE Department and at Watson School Advising are extremely friendly and genuinely interested in your success and professional development.

Within the Department of Systems Science & Industrial Engineering, the faculty of interest for academic advising and related purposes are:

- Dr. Sarah Lam (sarahlam@binghamton.edu) – ISE Graduate Director
- Dr. Harold Lewis (hlewis@binghamton.edu) – SS Graduate Director
- Dr. Daryl Santos (santos@binghamton.edu) – Undergraduate Director
- Professor Thomas Koon (tkoon@binghamton.edu) – Sophomore Advisor
- Dr. Robert Emerson (remerson@binghamton.edu) – Junior Advisor
- Dr. Susan Lu (slu@binghamton.edu) – Senior Advisor

Watson School Advising is another excellent and helpful resource for students. [http://www2.binghamton.edu/watson/advising/] The Undergraduate Advising office is
located in LSG 552; the Graduate Advising office is located in EB H11. Watson Advising is also available via e-mail at wtsnadv@binghamton.edu.

More information regarding academic and related advising can be found at the SSIE Department’s advising web page

4.2 Internship/Career-Specific Resources
For more career-oriented guidance there are many options.

The Career Development Center <http://cdc.binghamton.edu> offers advice and guides on cover letters, resume writing, interviews, job searching, mock interviewing, and related topics. The Career Development Center also sponsors many programs on campus, such as the job fair and employer information sessions that provide students with valuable networking opportunities for career advancement. The Career Development Center also administers eRecruiting <http://binghamton.experience.com>, its own job recruitment website. Many employers post job listings to eRecruiting hoping to hire BU graduates.

The Career Development Center also offers counselor-on-call hours for any student who needs assistance with their cover letter, resume, or interview. Visit the Career Development Center website for more information and specific hours.


Employers’ websites are a great resource for not only finding jobs at a particular company, but also for providing valuable information on the employers' industries as well as general information on technology and relevant recent developments at the company.

Community websites and organizations such as Broome-Tioga Workforce New York (http://www.broomeitiogaworks.com/) provide valuable information regarding upcoming local professional events and local jobs.

For government jobs, consider USAJOBS, the federal government’s official job recruitment website (http://www.usajobs.opm.gov/).

For non-profit jobs, http://www.idealist.org/ is known to be a good resource. The Idealist organization has a job search database and also holds employment fairs throughout the country regularly.

Professional organizations such as the Institute of Industrial Engineers (IIE) also post jobs on their websites. See section 4.3, Professional Resources, for more information regarding professional organizations.
4.3 Professional Organizations & Student Chapters

Industrial and Systems engineers may be interested in belonging to one or more of a variety of professional organizations. The major ones are:

- Institute of Industrial Engineers (IIE)  
  <http://www2.binghamton.edu/watson/about/clubs-and-orgs.html#IIE>
- Alpha Pi Mu Industrial Engineering Honor Society (by invitation)  
  <http://www2.binghamton.edu/watson/about/clubs-and-orgs.html#apm>
- Tau Beta Pi National Engineering Honor Society (by invitation)  
  <http://www2.binghamton.edu/watson/about/clubs-and-orgs.html#TBP>
- National Society of Black Engineers (NSBE)  
  <http://www2.binghamton.edu/watson/about/clubs-and-orgs.html#nsbe>
- Society of Women Engineers (SWE)  
  <http://www2.binghamton.edu/watson/about/clubs-and-orgs.html#swe>
- Society of Hispanic & Professional Engineers (SHPE)  
  <http://www2.binghamton.edu/watson/about/clubs-and-orgs.html#SHPE>
- American Society for Quality (ASQ)  
  <http://asq.org>
- Human Factors & Ergonomics Society (HFES)  
  <http://hfes.org>
- Institute for Operations Research and the Management Sciences (INFORMS)  
  <http://informs.org>

Many professional organizations offer a number of free educational resources, in addition to paid courses, certifications (e.g. lean six sigma green belt or black belt) information regarding conferences, and other valuable career resources for life-long learning.

Membership in a professional organization is yet another avenue for career networking; individuals you network with may prove to be valuable assets who may provide you with career opportunities you hadn’t known about.

There are many professional organization student chapters in the Watson school. You can become a student member, often free or at a heavily discounted rate. For more information visit <http://www2.binghamton.edu/watson/about/clubs-and-orgs.html>

4.4 Resources for International Students

As an international student, your choices in the United States for positions in some industries (those that require citizenship or security clearance) may be slightly limited.

The Career Development Center offers career services for international students. This webpage can be found at <http://www2.binghamton.edu/career-development-center/students/international-students/index.html>.

For more information regarding what may be required of you as an international student applying for internships or jobs, contact the Office of International Student & Scholar Services <http://isss.binghamton.edu>. There is also an employment page on the Office of International Student & Scholar Services page that provides employment options available
to you based on your visa <http://www2.binghamton.edu/career-development-center/students/international-students/laws-governing-us-employment.html>.

5. **Undergraduate Timeline**

It is extremely important that you stay on track with your courses during your undergraduate studies so that you may graduate on time.

You can access the curriculum for your catalog year at <http://www2.binghamton.edu/watson/advising/current/major-reqs.html>. For example, if your first semester was Fall 2011, click the “2011-2012” link under “BS in Industrial & Systems Engineering.”

You should consider applying for internships for the summers after your freshman, sophomore, and junior years of undergraduate study. Though less likely after freshman and sophomore years of study, some internships do exist at those levels.

If you are looking to apply to summer internships, deadlines may be as early as October of November of the year prior due to large volumes of candidate applications. Make sure you make note of and heed deadlines given by employers for their positions.

Should you choose to enter industry upon graduation, it is wise to begin applying for full-time jobs as soon as you enter your senior year, if not earlier. It is never too early to begin applying. According to the Career Development Center it is best to apply early. Applying early, with a solid resume, can catch an employer’s eye. Employers will keep track of good applicant they are interested in hiring.

Applications to graduate schools are generally due around March or April for applications to the Fall semester. Make sure you check with the individual universities for particulars regarding application deadlines and fees. Be sure to spend time before hand to collect reference letters (or any other materials) that may be needed. Take any graduate school test early so your test results will arrive before the graduate schools deadlines.

6. **SSIE Dept. Graduate Success**

Graduates of the BS ISE program leave the SSIE Department with a valuable skill set that leads to hiring by top companies, organizations, and academic institutions throughout the country and world. Employers know the value of an Industrial & Systems Engineering graduate from the Watson School of Engineering.

The SSIE Undergraduate Alumni Profile Page can be found at <http://www2.binghamton.edu/watson/programs/academic-departments/systems-science-and-industrial-engineering/people/alumni.html>. It contains employment information for some recent BS ISE graduates who have chosen to submit their information to the SSIE department.
7. Local Employers

There are quite a few employers in the Greater Binghamton area that have a history of employing industrial and systems engineers, including some BU ISE graduates. Some local employers of note are:

<table>
<thead>
<tr>
<th>Company</th>
<th>Town</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lockheed Martin</td>
<td>Owego</td>
<td><a href="http://www.lockheedmartin.com/">http://www.lockheedmartin.com/</a></td>
</tr>
<tr>
<td>United Health Services (Binghamton General Hospital and Wilson Memorial Hospital)</td>
<td>Binghamton, Johnson City</td>
<td><a href="http://uhs.net/">http://uhs.net/</a></td>
</tr>
</tbody>
</table>

8. Other Employers

There are many other employers who are interested in employing ISE graduates. Listed below is a small sample of the types of employers who have recruited through the University's eRecruiting site.

<table>
<thead>
<tr>
<th>Employer Name</th>
<th>Type of Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphenol Aerospace Operations</td>
<td>Aviation/Aerospace, Manufacturing</td>
</tr>
<tr>
<td>Amscan</td>
<td>Consumer Products, Engineering - Industrial, Engineering – Manufacturing</td>
</tr>
<tr>
<td>Argus Information and Advisory Services</td>
<td>Consulting - Other, Finance/Banking – Other</td>
</tr>
<tr>
<td>Department of Homeland Security</td>
<td>Government – Federal</td>
</tr>
<tr>
<td>Eli Lilly &amp; Co.</td>
<td>Healthcare - Pharmacy, Sciences - Life Sciences</td>
</tr>
<tr>
<td>Epic Systems Corporation</td>
<td>Other, Technology – Software</td>
</tr>
<tr>
<td>ERNST &amp; YOUNG, LLP</td>
<td>Accounting</td>
</tr>
<tr>
<td>Estee Lauder</td>
<td>Consumer Products, Cosmetics/Beauty, Manufacturing</td>
</tr>
<tr>
<td>General Electric (GE)</td>
<td>Energy/Utilities</td>
</tr>
<tr>
<td>GLOBALFOUNDRIES</td>
<td>Engineering – Manufacturing</td>
</tr>
<tr>
<td>INROADS, Inc.</td>
<td>Nonprofit Organization</td>
</tr>
<tr>
<td>Montefiore Medical Center</td>
<td>Nonprofit Organization</td>
</tr>
<tr>
<td>Company</td>
<td>Industry/Field</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Morgan Stanley</td>
<td>Finance/Banking – Other</td>
</tr>
<tr>
<td>PricewaterhouseCoopers, LLP</td>
<td>Accounting</td>
</tr>
<tr>
<td>Target Stores</td>
<td>Retail/Merchandising</td>
</tr>
<tr>
<td>US Department of State</td>
<td>Government - Foreign Service/Diplomacy</td>
</tr>
</tbody>
</table>

9. **In Conclusion**

It is important for you to start taking your professional career seriously as soon as you become an undergraduate student. It is never too early to become accustomed to the engineering and business world by keeping an up-to-date resume, networking with individuals within industry and academia, and researching industries and companies of interest.

If you ever, throughout the course of your undergraduate studies, need guidance on your professional career and development, do not hesitate to use the resources provided in the Systems Science & Industrial Engineering Department and the Watson School. The knowledge you gain while you are a student will be the foundation that you build upon in your professional career throughout the years.

If you have any changes or suggestions for improvement to this guide, please send an email to Marge Swiercz Clark at mscClark@binghamton.edu.