Internet Resource Guide

Online Resources for Penn State Industrial Engineering Majors

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1.1

What is in the Guide

This guide is a compilation of the fundamental websites that Penn State Industrial Engineering majors need to succeed. The websites' material ranges from an overview of the department to software websites provided by Penn State. A career service provided by the school is also included for convenience. In addition, the guide contains an engineering database with over 15 million publications as well as information about a professional society of Industrial Engineers. Finally, a homework help section is included to help students better understand their studies.

1.2

Who the Guide is For

This resource guide was created to aid underclassmen majoring in or thinking of majoring in Industrial Engineering at Penn State. Freshman can use the guide, but some of the material and language may be too advanced. Students can utilize the guide's websites to learn more about curriculum, internship opportunities, and available software. Upperclassmen can also find a use for the guide with the periodic index and the professional society source. They can use these resources to learn about what is going on in the field of Industrial Engineering.

1.3

What the Guide Assumes

This guide assumes that the user attends Penn State and that he/she possesses a working username and password to log into the Penn State VPN to access the sources. It was written assuming the user has a basic understanding of science and engineering terms. The user need not be familiar with the software available, but they must know how to operate a computer and be able to follow prompts while installing such software.

1.4

Organization of the Guide

There are a total of six online resources contained in this guide. Three of them are websites that every Industrial Engineering student will access numerous times. These sources are presented first in the guide. The homework help section is presented next. This source will also get quite a few visits from undergraduate students. The other two sources are indeed useful, but they will only be accessed under specific circumstances. These are periodic index and the professional society website. They appear at the end of the guide and are most useful to upperclassmen. They contain information such as a description of the major, professional research, and job opportunities.

1.5

Tips for Using the Guide

Readers of this document should be able to navigate from the table of contents to what they desire without reading anything in between. The user's computer should be tested to see that its applications are updated to their newest form. All of the websites listed have been tested to work on Internet Explorer, Firefox, and Google Chrome. If you have a specific question but are unsure where to begin try the Penn State Industrial Engineering Website on page five. Be attentive to future tips in the abstract sections of each source. These tips will improve your experience as you navigate each website.

2.1

The Penn State Industrial and Manufacturing Engineering Webpage

General Engineering Website

Location

Current students - http://www.ie.psu.edu/Undergraduate/Current/Current.html

Prospective students - http://www.ie.psu.edu/Undergraduate/Prospective/Prospective.html

Description

The Penn State Industrial Engineering webpage provides a starting point for many queries an underclassmen may have. The homepage contains dates of upcoming events and activities in the IE community at Penn State. It also has links to different news stories in the IE field to keep students up to date. Clicking on the undergraduate tab brings up two options. The first is for current students. It includes links for curriculum, courses, and the IE handbook. This website is extremely user friendly. It has tabs along the top to narrow your search, and a side box containing a few popular destinations. Information about services and support for students is often just a click away. The second option is for prospective students. Students can use this site to get insight on what the IE program is about if they are curious or trying to decide on a major. The very first thing that a prospective student will see if they visit the site is a video to get them excited about industrial engineering. Moreover, the prospective student webpage contains far less tabs and links. This helps the student feel less overwhelmed. Every Industrial Engineering student should familiarize themselves with this website and all that it has to offer.

Tips

- Bookmarking this site to your homepage is a good idea. You will frequently visit it, and will save yourself valuable time and effort by not having to search for it every time.

- Setting up an appointment with an advisor takes time. You can be proactive and answer a lot of your questions using this website.

- Use the IE handbook link to learn about what this major has to offer.

- Remember to check if a course has prerequisites before you schedule it. The prerequisites can be found in the handbook.

2.2

Center for Engineering Design and Entrepreneurship

General Engineering Website

Location

http://www.engr.psu.edu/CurrentStudents/Facilities.aspx

Description

The Center for Engineering design and Entrepreneurship (CEDE) is an excellent resource provided to Penn State students. Sophomore and Junior IE majors will have to use expensive programs to do work in classes such as EDSGN 100, IE 305, and other academics as well as extracurricular activities. CEDE includes up to date versions of Solidworks for different versions of Windows OS. Without this website, legally obtaining Solidworks would cost a student about $4000 for one license. Thanks to Penn State's CEDE, students can download and run Solidworks on their own computers for no cost. Installing this program requires patience and the ability to follow the list of prompts, but it is well worth the wait. IE 305 alone has students completing a large Solidworks project outside of class. Having this program on your personal computer allows you to practice different design methods at your own pace. Students can also use the CEDE website to request time in the design labs. IE 307 is an example of a course with a design component. In this course, students must design a part using Solidworks and then request materials for the part to be 3D printed. It is an interesting course that allows the students to do some hands on work.

Tips

- This site is not organized very well and may require extra time when searching through its pages.

- Do not skip over any of the steps when installing Solidworks on your personal computer. It is a large program that takes quite a bit of time to download. Do not waste your time by being hasty and not reading all the steps.

- Check this site often to see if Penn State is offering any other valuable and cost free downloadable programs.

2.3

Engineering Career Resources and Employer Relations

General Engineering Website

Location

http://www.engr.psu.edu/career/Students/resources/ecareer.aspx

Description

The Engineering Career Resources and Employer Relations page is an exceptionally easy and efficient way to market yourself to potential employers. First off, it is very easy to use because it includes tabs that take you right where you want to go. This site contains a component for students to utilize called eCareer. eCareer is a free online job search system that lists current engineering co-ops, internships, and full time employment opportunities from hundreds of companies across the country. Each and every job opportunity is posted because the employers are looking to hire Penn State students. This resource is available to all students in the college engineering and it is very easy to operate. Students can upload their resume and a brief customized cover letter and they will be sent out to companies of their choice instantly. You can also set up appointments to have your resume reviewed or to have a mock interview. You can even set up a reverse interview in which you get to ask all the questions. eCareer is a great way to supplement your job search. One final thing that this site can be used for is keeping up to date with the campus career fairs. These occur once in the fall and once in the spring.

Tips

- You can sending your resume out to employers as early as second semester freshman year from eCareer. This will give you maximum opportunity to land a job offer.

- Remember to keep updating your resume as you continue to gain valuable experience.

- Utilize the mock interviews and resume review opportunities so you are ready and less anxious for the career fairs.

3.1

Wolfram Alpha

Homework Help

Location

http://www.wolframalpha.com/

Description

Industrial Engineering requires the completion of numerous math courses as well as several math based major course such as statistics and probability. This site can be used to look up an equation that is unknown in order to complete homework assignments. It can also be used to graph solutions in order to make concepts more clear. Graphing solutions is the best use of this program. It is difficult and time consuming to graph functions by hand especially when you are working with three dimensions. This program quickly graphs any function you type into the search box. The site is very easy to operate. A student can click on one of many boxes near the bottom of the site to narrow his/her search, or simply type an equation into the search box. Industrial Engineering students have to complete large quantities of homework problems outside of class. This resource will aid in the completion of homework so that you can use your time more efficiently.

Tips

- This site is not to be used as an excuse to look up homework answers so that you do not have to do the work. It is important to understand how the solution was calculated because similar problems will show up on exams.

- You can insert various mathematical symbols using the extended keyboard located under the search box. This allows you to enter full equations.

- If you are curious about a particular type of equation, you can click on the "examples" link located under the search box to see if wolfram alpha can solve it or not.

4.1

Compendex

Periodic Index

Location

http://www.engineeringvillage.com.ezaccess.libraries.psu.edu/search/quick.url

Description

The periodic index, Compendex, is a useful tool for acquiring periodic literature in Industrial Engineering. The Industrial Engineering portion of this database is called "Engineering Village". An IE would be able to find many uses for this data base whether conducting research for class or for their own leisure. The student is able to search for exactly what they are interested in because the site has numerous drop down boxes that will narrow the search considerably. If you come across something you to further explore, you can check the availability of the resource at the library. If it is available head on over to the library and check it out. If you would rather not have the physical copy, the site allows you to preview pieces and read abstracts. The publications in this database date back to 1886. That means that this site contains 130 years of research pieces. It will certainly contain something they will be of use to every student who accesses it.

Every student attempting to graduate with an Industrial Engineering degree must complete a Capstone Design project. One aspect of this project is that the student must complete extensive research. This database can be extremely useful to seniors completing this project.

Tips

- You must be logged into the Penn State server to gain access to this database.

- This resource keeps track of search history ensuring that you do not have to remember how you found a certain piece of research.

- Limiting the date of research is a great way to narrow your search. It will also allow you to find more recent and applicable research.

5.1

Institute of Industrial Engineers

Professional Societies

Location

http://www.iienet2.org/

Description

The Institute of Industrial Engineers is a professional, non-profit society that allows users to network all over the world. It is extremely easy and wise for undergraduates to register themselves. For a small fee of $37 per year, a student is eligible to access all this site has to offer. IIE allows students to contact professional engineers as well as the opportunity to attend various conferences and events. Becoming a member of this society enhances your resume. It is not only something relevant to put on the resume, but allows professional engineers to review and offer suggestions to improve it. There is a section of the IIE page that contains various news articles that talk about what is going on in the field of Industrial Engineering. Undergraduates can learn about how the things they are learning in class are relevant in the real world. A branch of this society is a club at Penn State. Members are welcome to attend monthly meetings in which the board discusses important topics to aid undergrads. One such meeting I attended last year showcased a panel of three active IEs. Students were free to ask them whatever questions that wished. One other helpful meeting taught members how to create an effective and professional LinkedIn profile. The upperclassmen in this club are always willing to answer questions about what IE electives to take, or anything else about the department.

Tips

- If you do not feel like paying the $37 dollar fee to register for the IIE website, you should strongly consider joining the Penn State IIE club.

- If you do choose to register for the IIE website, it is worth your while to browse everything that it has to offer.

- If you are an upperclassmen searching for a job, this is a good place to supplement your search.