

Industrial Engineering Guide

Alberto Fernandez

Industrial Engineering Internet Resource Guide

Pennsylvania State University



Table of Contents

Introduction

Preface.....	Pg. 3
Content/Scope.....	Pg. 3
Audience.....	Pg. 3
Assumptions.....	Pg. 3
How this guide is organized.....	Pg. 4
Tips for using the guide.....	Pg. 4

Writing

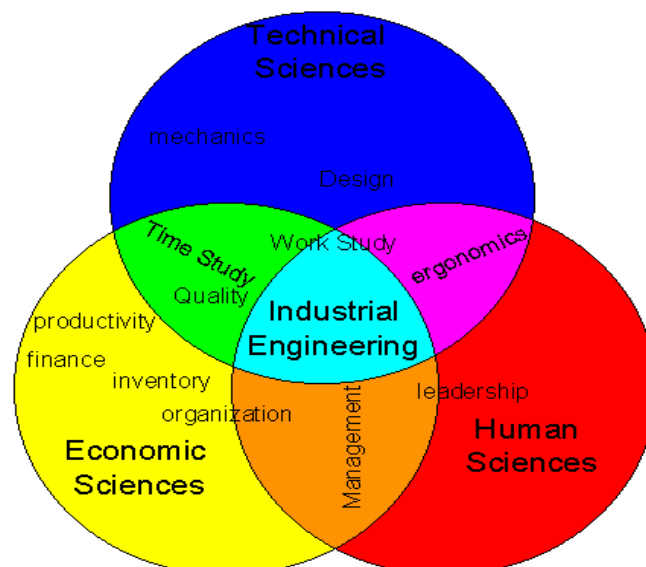
How to make bibliographies.....	Pg. 5
Engineering Village.....	Pg. 6

Mathematical

Employment Statistics.....	Pg. 7
Journal of Chemical Education.....	Pg. 8

Technology

AutoCAD Tutor.....	Pg. 9
IEEE Xplore digital library.....	Pg. 10



Preface:

This Internet Resource Guide was done to help out people of most engineering majors, especially industrial engineers. It has information that can be useful for most of the engineering branches like architecture engineering, civil engineering, and many others. You will find not only information for your major but for the classes you will have to take before actually getting accepted, making it easier and smoother to get better grades.

Content/Scope:

This guide is meant to help out people studying Industrial Engineering. It includes websites to help you out on most of the important classes required, lessons on how to use the most common programs and software in the Engineering area, and information comparing the different majors and jobs. It also includes information on how to increase the productivity and how to manage your time wisely.

Audience/Purpose:

The audience targeted to review this guide is of course engineers on mainly their first couple of years (freshmen and sophomore). This will help you get through your main classes in order to apply and get accepted to your major. The purpose is to find the adequate information of where to look or how to search in all the different site or resources for the basic and most common questions of the areas. This guide will help you in a wide variety of classes from math all the way to the computer and programing courses.

Assumptions:

We assume that the people reading this guide will be students either interested in studying some branch of engineering, or students having trouble or difficulty solving some kind of assignment. Do not expect to get all the answers you need here, this is meant to help you get the answers and understand how or why to solve your questions.

How this guide is organized:

This guide is organized very straightforward. It will start off with the English and writing topics. Here you will find tips and shortcuts when taking your writing and researching classes. Following that you will see the math aid. This will help you in almost all of the math classes needed for the major (at least 5 are required for the major). These abstracts will help with all the math classes in every way, including lessons and solutions. Following that the computer guide will be located. This will help you a lot in one of the most basic programs needed for all engineers, AutoCAD. To finish off you will find the two journals at the end.

Tips for using the guide:

This guide will consist in 6 abstracts that will hopefully help you have an easier time in the first couple of years of an industrial engineer. Each abstract will include its own tips on how to use it for to have a better and easier interference. Another tip I could advice would be to look around the websites for yourself. I will provide the more useful information on the areas mentioned, but I encourage you to look around and explore the different functions and links in each website.




Abstracts:

1. Website

Title: EasyBib

Source: <http://www.easybib.com>

Abstract: Easy Bib is a very useful website when it comes to writing research papers. This website will help you for a variety of courses from the elective courses, to the English ones, to the more advanced scientific and mathematical classes. In English 15 or ESL (its equivalent), they will teach you how to write the different types of citations for the different papers, and it will be here if you didn't already know, that this takes a long time, specially when you need to recur to various different sources in the same paper. This very easy to use website will help you do all the citations you want immediately so you can start worrying about the actual thing that matters, the paper. In here you will find the most common different types of citations like MLA, APA, etc, but unfortunately only the MLA is free.



The screenshot shows the EasyBib website. At the top, the logo "EasyBib Write Smart." is on the left, and "Login Register Help Contact" is on the right. Below the logo is a navigation bar with tabs: "Research BETA", "Notes & Outline", "Bibliography" (selected), "Citation guide", and "Educator blog". The main content area is titled "The Free Automatic Bibliography and Citation Generator" with the subtitle "Save time by creating a Works Cited page instantly in MLA, APA, or Chicago!". Below this is a row of tabs: "Website" (selected), "Book", "Newspaper", "Journal", "Database", and "All 59 options". Under the "Website" tab, there are links for "Manual entry" and "Help", and a section for "MLA (free!)" with links for "APA" and "Chicago/Turabian". A text input field says "Cite a website by entering its URL or by searching for it." with a "Cite this" button. To the right, a section titled "How to cite in 3 steps:" lists: 1. Select your source & search for it. 2. We'll automatically cite it for you. 3. Repeat to build your bibliography!

Looking for APA Format?



Individual Subscriptions

Upgrade Now to Unlock Additional Features:

- APA, Chicago/Turabian, and MLA styles
- Virtual Notecards & Dynamic Outlining
- Best-Rated Citation Tool by Students!

[SIGN UP FOR A FREE TRIAL](#)

Tips:

- Pay close attention to the instructions of your assignment to see if the teacher asked for a specific type of citation.

2. Index

Title: Engineering Village

Source:

<http://www.engineeringvillage.com.ezaccess.libraries.psu.edu/controller/servlet/Controller?CID=quickSearch&database=3>

Abstract: This vital database will help each and every one of the students in engineering. With this index you will be able to research most of the engineering related papers you are assigned. This website lets you very specifically research the precise topic with trusted results that are provided and approved by Penn State. With this in hand you will have much better luck when trying to look very specific and Penn State-related topics. This site should reduce most of the other search engines like Google, Yahoo, etc.



Search | Selected records | Settings | Tags & Groups

Quick Search | Expert Search | Thesaurus Search

DATABASE ☐ All ☒ Compindex ☒ Inspec [Databases](#) | [Search tips](#)

SEARCH FOR
 in [i](#)
 in
 in
[Add search field](#) |

LIMIT TO [i](#)
 All document types
 All treatment types
 Discipline type not available
 All Languages
☒ 188+ TO 201+
☐ 1 Updates

SORT BY [i](#)
☒ Relevance ☐ Publication year
☐ Autostemming off

Browse Indexes [i](#)

- Author
- Author affiliation
- Controlled term
- Source title
- Publisher

Latest Resources

- [Here's what's new](#)
- [Training videos](#)
- [More videos](#)
- [Tell us what you think](#)

More Search Sources [i](#)

- CRC ENGnetBASE
- Espacenet
- IHS Standards
- LexisNexis News
- Scirus
- USPTO

Search history [i](#)

The Search history has been closed.
To view Search history, click the **Show** link.

Note: This Search history will contain the latest 50 searches you perform in this session.

Tips:

- PLEASE use this instead of Wikipedia.
- Before doing what most people do when they have an assignment and just go to the first search engine that comes to mind, try this index before to check the results, which will probably be much better, and also take advantage of the aid Penn State has to offer.
- Try using the options to narrow down your search for better results.

3. Government site

Title: Occupational Employment Statistics

Publisher: United States Department of Labor

Source: http://www.bls.gov/oes/current/naics4_551100.htm

Abstract: Later on in the career, you will have to start writing essays and researching your more specific side of Industrial Engineering. Given that Industrial Engineering is a very broad major, people tend to specialize in a certain topic, some lean more to business, some to manufacturing, management, etc. This website will help you compare the branches of industrial engineering so you can write papers and also decide what is the most convenient for you. It is very convenient to start thinking and deciding early on what path are you going to take on the major so you can also decide if you can get a minor with it.

NAICS 551100 - Management of Companies and Enterprises

Display records

Filter Table by Text:

Occupation code	Occupation title (click on the occupation title to view an occupational profile)	Group	Employment	Employment RSE	Percent of total employment	Median hourly wage	Mean hourly wage	Annual mean wage	Mean wage RSE
00-0000	All Occupations	total	2,003,680	0.6%	100.00%	\$28.52	\$35.25	\$73,320	0.5%
11-0000	Management Occupations	major	388,240	1.0%	19.38%	\$56.19	\$63.25	\$131,570	0.5%
11-1000	Top Executives	minor	100,670	1.4%	5.02%	\$66.82	\$74.98	\$155,960	0.7%
11-1011	Chief Executives	detail	21,600	2.4%	1.08%	(5)	\$101.02	\$210,120	1.1%
11-1021	General and Operations Managers	detail	79,070	1.5%	3.95%	\$59.23	\$67.87	\$141,170	0.8%
11-2000	Advertising, Marketing, Promotions, Public Relations, and Sales Managers	minor	64,280	1.9%	3.21%	\$56.82	\$62.28	\$129,550	0.9%
11-2011	Advertising and Promotions Managers	detail	2,670	4.7%	0.13%	\$44.68	\$51.30	\$106,710	1.9%
11-2020	Marketing and Sales Managers	broad	56,490	2.0%	2.82%	\$57.70	\$63.05	\$131,140	0.9%
11-2021	Marketing Managers	detail	28,140	2.7%	1.40%	\$59.94	\$64.75	\$134,680	1.0%
11-2022	Sales Managers	detail	28,350	2.5%	1.41%	\$55.29	\$61.36	\$127,630	1.2%
11-2031	Public Relations and Fundraising Managers	detail	5,120	3.7%	0.26%	\$53.38	\$59.55	\$123,860	1.6%
11-3000	Operations Specialties Managers	minor	149,470	1.2%	7.46%	\$55.49	\$60.92	\$126,700	0.6%
11-3011	Administrative Services Managers	detail	15,800	2.7%	0.79%	\$43.56	\$48.31	\$100,480	1.1%
11-3021	Computer and Information Systems Managers	detail	29,860	1.7%	1.49%	\$59.74	\$63.43	\$131,940	0.7%
11-3031	Financial Managers	detail	54,450	1.8%	2.72%	\$60.02	\$67.16	\$139,690	0.7%
11-3051	Industrial Production Managers	detail	7,990	3.5%	0.40%	\$50.82	\$55.68	\$115,810	2.7%
11-3061	Purchasing Managers	detail	11,420	3.0%	0.57%	\$54.05	\$58.18	\$121,020	1.2%
11-3071	Transportation, Storage, and Distribution Managers	detail	6,780	3.3%	0.34%	\$46.51	\$50.89	\$105,860	1.5%
11-3111	Compensation and Benefits Managers	detail	4,000	2.7%	0.20%	\$50.56	\$55.59	\$115,620	1.2%
11-3121	Human Resources Managers	detail	14,780	2.0%	0.74%	\$54.11	\$59.70	\$124,180	0.8%
11-3131	Training and Development Managers	detail	4,400	2.8%	0.22%	\$49.21	\$52.84	\$109,910	1.3%
11-9000	Other Management Occupations	minor	73,830	2.2%	3.68%	\$48.32	\$52.84	\$109,910	1.1%
11-9013	Farmers, Ranchers, and Other Agricultural Managers	detail	450	36.0%	0.02%	\$39.36	\$41.36	\$86,040	4.6%

Tips: - Carefully see the statistics and wages of each job and branch for the first 10-15 years.

- Keep in mind that Penn State is one of the most prestigious Universities in Industrial Engineering, and never settle for the average.

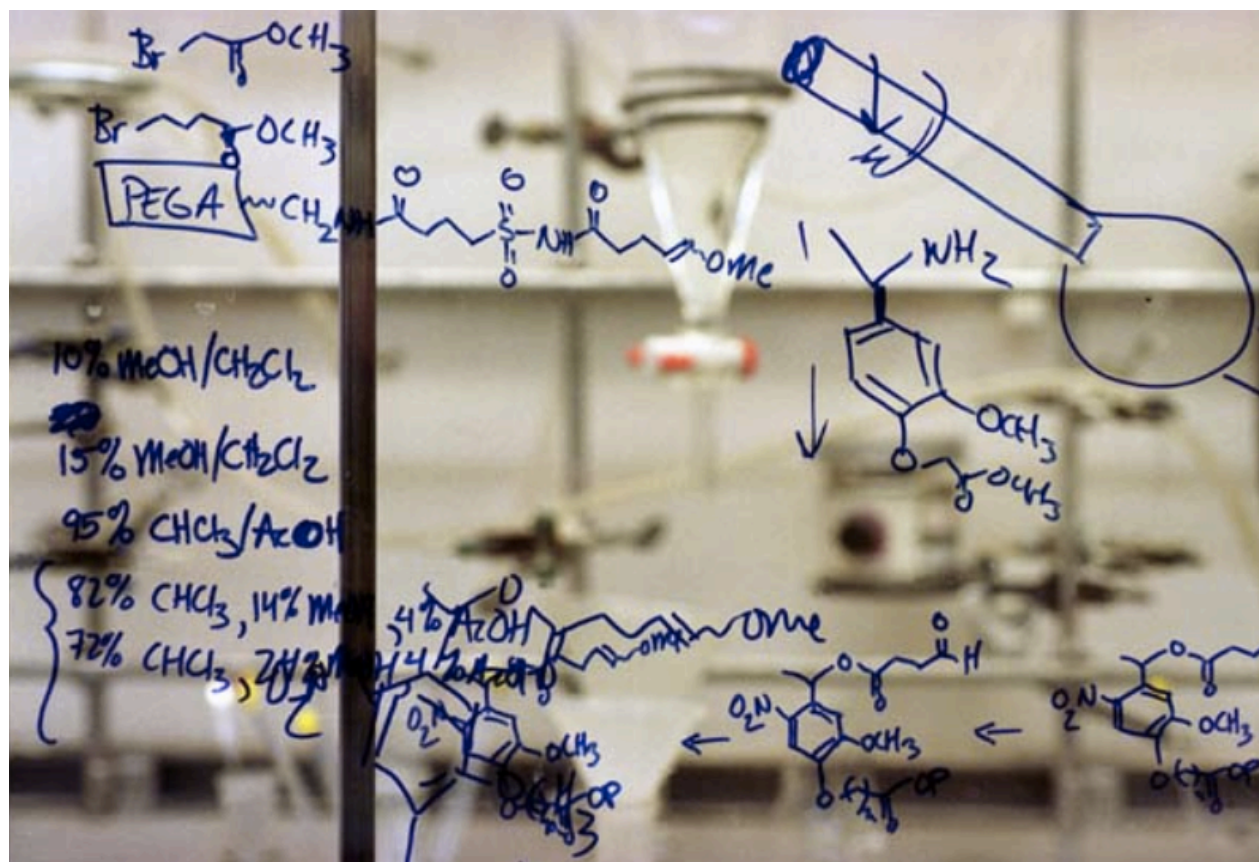
- Penn State offers the great opportunity of getting minors related to Industrial Engineering that only require 3 or 4 extra classes, and this could help you decide where you want to go.

4. Journal

Title: Journal of Chemical Education

Source: <http://pubs.acs.org/journal/jceda8>

Abstract: For most of the engineers, chemistry is one of the most challenging classes for several reasons. Besides the fact that chemistry is hard itself, the lab is also very time consuming, especially when you don't know where to look and research for the lab reports or even the pre-labs. Chemistry 110 is one of the four required classes to get in the major, which means you have to pass it with a C or above. This journal will help you immensely when doing the lab reports and chemistry researches. In this useful journal you will find various different articles, including Lab experiments and explanations of them. This is the official journal of the Division of Chemical Education of the American Chemical Society, which means it has plenty of experiments and research topics you can find very useful depending on your assignment or class.



A sample article from this journal would be “A simple, effective demonstration of titration curves and indicator selection”, which talks about basic titration and demonstrates it. In chemistry 110 this is an important topic that has a couple labs on it, and this article explains how it works and when is it present.

Article

A simple, effective demonstration of titration curves and indicator selection

Lawrence C. Nathan

J. Chem. Educ., 1973, 50 (4), p 262

DOI: 10.1021/ed050p262

Publication Date: April 1973

PDF [555 KB]

Abstract

PDF w/ Links[555 KB]

Add to ACS
ChemWorx

Your current credentials do not allow
retrieval of the full text.

Purchase the full-text



PDF/HTML,
figures/images,
references and tables,
(where available)



Abstract

The concepts of acid-base titration curves and selection of the appropriate indicator for an acid-base titration can be easily and effectively demonstrated by use of a potentiometric titration.

Keywords (Audience): High School / Introductory Chemistry

Keywords (Domain): Demonstrations

Keywords (Subject): Acids / Bases

Tips:

- Try looking for the experiments before you go to class.

Bibliography:

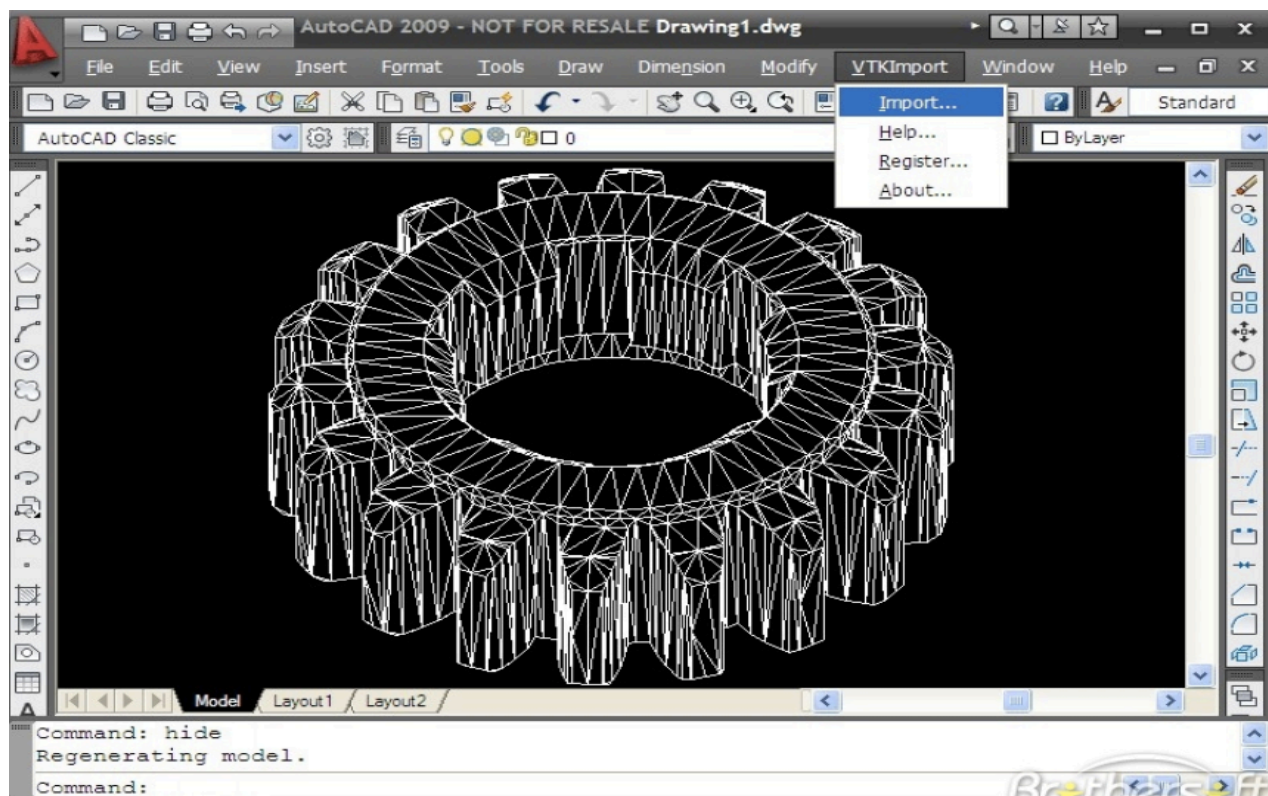
Nathan, Lawrence. “A simple, effective demonstration of titration curves and indicator selection.” *Journal of Chemical Education* 50. 4 (1973): 262. Web. 25 May 2013.

5. Website

Title: CADTutor

Source: <http://www.cadtutor.net/tutorials/autocad/>

Abstract: Throughout the whole career of Industrial Engineering and pretty much every other engineering, you will have to take some classes of Engineering Design. These classes are very important for the career and they teach you how to use programs like AutoCAD and other design programs, which are very commonly used to build houses, engines, and any kind of 3D model. This will be mainly used for the EDSGN 100 course, which regularly meets for 2 hours 3 times a week. It is easy to get lost in this class, you cannot get distracted or miss classes because every class has new information you will need to do the assignments, so this website will help you in every area you need help in, the lessons are very easily found and pretty complete.



Tips:

- Even if you just need to refresh your mind on a certain topic, always start watching the videos from the beginning.
- When you can't reach your teacher, use the forum in this website to ask questions.
- Try never to miss EDESGN 100 because getting behind could bring serious consequences.

6. Journal

Title: IEEE Xplore Digital Library

Source: <http://ieeexplore.ieee.org.ezaccess.libraries.psu.edu/Xplore/home.jsp?reload=true>

Abstract: Throughout the course of the career, you will need to take several computer based courses like EDESGN 100, Computer Science 200, IE 305, IE 405, etc. This website is a Penn State Industrial Engineering journal which has information of numerous different topics to help you out with this classes. I would advice you to use these journals as much as you can, especially when taking the Computer Science course. This course is very complicated and in here you can find plenty of answer for most of the questions you encounter in the class. This class is a lot of information and memorization and here you can find everything you need about C++, Mat lab, and all the other codes and languages you will use.

A sample article of this journal would be “C++: An evolving language”. In here you can find the overview of how the language has been changing, as well as a little background on what it is and why it is used.

C++: an evolving language


 Full Text
Sign-In or Purchase

1


Levitt, S.P. ; Sch. of Electr. & Inf. Eng., Univ. of the Witwatersrand, Johannesburg, South Africa


Author(s)


Abstract	Authors	References	Cited By	Keywords	M
----------	---------	------------	----------	----------	---


 Download Citations

 Email

 Print

 Request Permissions

 Save to Project

 0

 Like

0

 Tweet

0

This work gives an overview of the recent, significant, changes that the C++ language is undergoing. These include: the increasing popularity of the facilities and idioms provided by the standard template library and the boost libraries; the use of smart pointers instead of raw pointers; and the emergence of generic programming and template meta-programming as a powerful paradigm. The next version of the C++ standard is discussed and shown to further evolve the language by offering better support for the way in which C++ is being used in practice. Moving beyond the language itself, there are several initiatives that seek to incorporate C++ into virtual machine environments. Microsoft has opted to extend the C++ language to take advantage of their NET platform, while the Python community has produced several tools for generating C++ binding. These approaches (which make different trade-offs) are discussed. Overall, the current changes within C++ promote its use as a more high level language than in the past and further the promise of large libraries of reusable, easily-customisable code. The ability to use C++ in the production of hybrid applications which run on managed virtual machines offers new possibilities for combining the richness of the virtual machine environment with the efficiency of C++.

Published in:
AFRICON, 2004. 7th AFRICON Conference in Africa (Volume:2)

Tips:

- Even if your assignment is not entirely on computer, I encourage you to search for answers here.
- Try to search as specific as possible for the best results.

Bibliography:

Levitt, S.P., "C++: an evolving language," *AFRICON, 2004. 7th AFRICON Conference in Africa 2*, (2004): 15-17. Web. 25 May 2013.