Introduction to Engineering & Library Resources

1. Introduction to Engineering & Library Resources

1.1 Start

To begin, click the START button.

1.2 Introduction

Welcome to the Introduction to Engineering and Library Resources tutorial.

This short self-paced tutorial will introduce you to some of the best informational resources to use while a student here at Arizona State University, and lay a foundation for you as you seek out accurate information in your career as an engineer.

You can listen to or view the contents of this tutorial on the menu on the left hand side.

To navigate forward click the NEXT button located in the bottom right hand corner of this screen.

1.3 Learning Outcomes

Upon completing this tutorial you will:

- **Understand the importance of obtaining and using accurate information in your field of engineering.**
- **Be familiar with the different types of engineering information sources.**
- **Know how to get access to information resources through the ASU Library, and finally,**
- **Be familiar with how to get help from Library research guides, tutorials and staff.**

1.4 Why Information is important to Engineers

Engineers need accurate information for a variety of reasons.

- **To write a report**
- **To conduct a research review**
- **To learn how a device works**
- **To reference products, components or material properties**
- **To find a formula or equation**
- **To ensure their work abides by established engineering standards or codes**

The integrity and safety of the projects engineers work on depend upon current and accurate information.

1.5 Types of information sources

In order to get good information Engineers may use a wide variety of sources in an equally wide range of formats including both online and in print materials. Some examples include:

- Reference sources and Handbooks, which are curated resources where you can get quick, ready-information on different engineering topics.
- Material properties databases, similar to reference materials they provide quick information on the attributes and tolerances of different materials which may be essential for your successful completion of an engineering project or design.
- Technical reports are another type of information resource you may use, and usually provide detailed technical information about a topic, product or engineering project, and oftentimes include analysis and conclusions on that given topic. Similarly case studies are reports that are useful learning tools for students and engineers to help them learn from past projects and engineering mistakes.

1.6 Types of information sources (cont)

Examples (continued):

- Standards, Codes and specifications are critical to many engineers as they provide the specific guidelines by which many devices and projects need to conform to in order to work with other devices, or to be safe.
- Statistical information is being used more and more by engineers, due to the

development of large datasets and big data in recent years, engineers are now able to take advantage of these datasets to make more data-based or data-driven decisions.

- Finally engineers oftentimes need to be familiar with different patents and how to search for them in a given topic area.

1.7 How the ASU Library can help

The ASU Library has many different tools at your disposal to help you get access to the information you need. Including:

- Subject specific research guides

- Both online and print science and engineering book collections (including many engineering handbooks and reference materials)

- Online science and engineering article indexes and databases

- Subscriptions to leading engineering journals with access to a national interlibrary loan service, which allows students to get access to materials not owned or accessible through the ASU Library collections.

- ASU Library also has an engineering standards library.

1.8 Engineering Research Guides

Library research guides are a great place to become familiar with information resources in your subject area of engineering as they are quick ready-reference websites that are curated to provide you links to authoritative and valuable resources in your area of study. In addition to guides covering most areas of engineering, there is also information on writing literature reviews, guidance on citing and citation styles. Information about how to use the library tools to stay current on engineering literature and finally helpful links to biographical resources on noted scientists and engineers.

1.9 How to find Books and Reference Materials?

To search for and find engineering books and reference materials, start with the ASU Library's OneSearch. Which is a tool that searches both the library's print collection as well as many of the online materials the library has access to. Additionally, use the engineering research guides, mentioned previously as they have links to many reference materials curated for specific subject areas. Other resources such as Knovel contain thousands of engineering reference materials in a one-stop digital collection. Many engineering associations such as the Association of Computing Machinery, American Societies of Mechanical

Engineers and Civil Engineers, IEEE or Institute of Electrical & Electronics Engineers provide access to large digital libraries of resources created or maintained through those associations and accessible through the ASU Library. Finally, always feel free to ask library staff for help at any time for assistance in knowing which resources to use or to get help in finding articles, books or other materials that you may need.

1.10 How to find Articles?

If you are looking for journal articles in your subject area, the ASU Library One Search is a convenient tool to check to see if the Library has access to the specific article you are looking for. If you want to do a literature search on a certain topic, you can also use OneSearch to do a targeted keyword search of articles in a given area. One drawback is that One Search covers all subject areas studied at ASU, so you may run across many off-topic resources depending upon your search terms.

1.11 Engineering Databases

For a more focused search there are several databases geared specifically towards engineering resources, including Compendex, Web of Science and Scopus, which are large-scale article indexes covering science and engineering topics. IEEE's Xplore is another great engineering index focusing more on electrical and computer engineering topics. Many more topical engineering databases and indexes can be found by clicking on the Research Databases link from the main library page, and then clicking on subject drop down menu for Engineering & Computer Science.

1.12 How to find standards?

Standards are a unique type of information source that you may encounter either in your academic or professional career. The ASU Library has a standards collection and some tools to assist you should you need to reference a specific standard for your work. Use one of the standards search tools such as the IHS Global engineering search engine, the Tech Street website or Document Center, to find standards for a the area of study you are looking for. After finding the specific standard or standards you need, use the ASU Library online guide on standards to browse our collection and see if we own it in the standards library. If at any time you need further assistance, do not hesitate to contact the library for help!

1.13 Library Tutorials

In addition to this tutorial there are many other self-paced tutorials available from the library, covering a wide range of topics including developing research skills, using subject-specific databases, citing sources, and research data management. These tutorials can help you achieve greater success in finding and retrieving authoritative information resources. To find the complete list of tutorials navigate to the library website, from the navigation bar at the top of the website click on "Help" and then browse down to the tutorials link. Or, go to https://lib.asu.edu/tutorials.

1.14 Ask a Librarian

Finally, the Ask a Librarian service, available through the ASU Library website is a convenient portal to get any assistance you may need from Library staff to help you find, or retrieve information resources.

1.15 Learning Outcomes

Now that you have completed this tutorial you can:

- Understand the importance of obtaining and using accurate information in your field of engineering.
- Be familiar with the different types of engineering information sources.
- Know how to get access to information resources through the ASU Library, and finally,
- Be familiar with how to get help from Library research guides, tutorials and staff.

1.16 Congratulations!

Congratulations! you've completed the *Introduction to Engineering & Library Resources* tutorial!

To exit the tutorial, click the "Next" button.