Information Sources in Mechanical Engineering

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Contents

This tutorial will help you gain a better understanding of the information ecosystem: the variety of different sources you might use, when each is likely to be the best choice, and how to find them.

Learning Objectives

After completing this tutorial, you should be able to

- Choose an appropriate type of source to meet a given information need.
- Locate several types of reliable information sources.
- Articulate why citation is important
- Ask for help if needed!

PART I

UNDERSTANDING MECE INFORMATION SOURCES

1. Purpose-Process-Product

Why does it matter whether or not you know what type of source you need? Can't you just type your query into Google and look at the first few results?

Sometimes, a basic web search will lead you to a source you can feel comfortable using for your academic work, and sometimes it won't. If you know upfront when you need to look elsewhere, you can save yourself some time and conduct a more efficient search. Purpose-Process-Product gives you a framework to understand the different uses of different types of information resources, so you can be confident you're choosing the right source for your information need.

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2. Examples of Information Sources

Let's take a look at some of the different types of sources you might use for your academic work, and consider the purpose, creation process, and product format of each.

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Of course, these are not the only types of sources you will encounter. You may want to consult a scientific encyclopedia for an overview of a new-to-you process, or review government sites for access to regulations that might apply. Trade journals can be useful for insight into the industry, and pricing data can come from a variety of commercial providers. Check your Subject Guide for a curated list of links for your discipline.

3. Test Your Understanding

Try this short quiz to check your understanding of engineering information sources. Match each format to its image, then choose the information source that best meets the stated need.

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https://openeducationalberta.ca/mece200lib/?p=23#h5p-3

PART II

EFFICIENT SEARCHING

4. General Search Information

As mentioned in the introduction, sometimes a general web search can lead you to a suitable source, and sometimes it can't.

- Many more journal articles are available openly online than they used to be, though the published engineering literature is only about 20% open access.
- Patents are openly searchable, either through individual country patent and trademark office sites or through a free tool like Google Patents or the Lens.
- Standards are locked down, and most are only available through purchase or subscription.
- Web searches may turn up reliable data, as long as you feel confident you can evaluate the source to determine whether it is likely to be accurate and authoritative. If you are not sure, I recommend using the library resources so you can trust that you are basing your work on the best possible information.

Your search will be more efficient of you know the best way to locate the different types of information sources. The following section will highlight some of the places you can find the needed sources for your work.

5. Search Tips by Source Type

The slides below describe good starting points for your search.

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6. Test Your Understanding

Try to find each of the following items. After you've found an answer, click the arrow to reveal one recommended way to locate the information.

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PART III
CITATION

7. References

Here are the sources I consulted when putting together this guide:

Hofer, Amy R., et al. *Transforming Information Literacy Instruction: Threshold Concepts in Theory and Practice*, ABC-CLIO, LLC, 2018. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/ualberta/detail.action?docID=5572303.

Osif, Bonnie A. *Using the Engineering Literature*. 2nd ed. Boca Raton, Fla.: CRC Press, 2012.

You will be required to cite your sources in your academic work as well. Most researchers use a reference manager (my preference is Zotero) to keep track of items they have read. These tools can help format your references in the required style and insert them properly into your reports. They become most useful if you need to keep track of bibliographic information for many papers, or if you need to share the information with others.

8. Why We Cite

Why is it so important to cite your sources? To avoid plagiarism, yes, but also...

- To challenge your thinking
- To give credit where it's due
- To take part in scholarly conversation and put your ideas in context
- To provide a roadmap for your thinking – for your professors and for your colleagues

And even to help your future self. You may want to refer back to a previous project to figure out how you found certain information. Complete references come in handy!

9. Citation Help

Make sure you know whether your professor requires you to use a specific citation style. For examples of how to format citations according to the most common styles, check the Library's Citation Guide. You can also ask for citation help using the Ask us! chat service if you run into trouble.

PART IV
GETTING HELP

10. Ask the Library

How to get library help

If you have any trouble finding good sources or accessing library material

Ask Us!

- Use the Ask Us! chat box on the library homepage to get help over chat.
- Visit the Ask Us page to connect with the library by text or email.

You can also contact the Cameron Science, Engineering and Business Library at cameronhelp@ualberta.ca

11. Book a Consultation

Ask Your Librarian

Your subject librarian can also help you with questions about your research.

For Mechanical Engineering, that's me!

Get in touch by email at ahenry@ualberta.ca