Mechanical Engineering Resources Handout

Check your McMaster Library subject guide for an idea of where to start. A subject guide is a collection of information sources and tools geared towards a particular subject area. This will give you quick access to many of the resources discussed in class.

http://library.mcmaster.ca/guides/engineering-mechanical

Print & e-Books

The library has access to thousands of current books in Mechanical Engineering, both in print and electronic. The easiest way to access this collection is by searching the library catalogue (first tab on library.mcmaster.ca). You can use the navigation on the left side of the results screen to limit to 'books' or 'online' depending on your preferences.

Why search for books or e-books?

- to obtain broad and contextual information (historical data, overviews, etc.)
- engineering handbooks provide authoritative information on processes, calculations, and designs

Some useful e-book collections:
Access Engineering Library
American Society for Mechanical Engineers (ASME) Digital Collection (also has e-journals and conference papers)
Digital Engineering Library
SpringerLink

Journal Articles

Definition: published in academic journals, these discuss specialized information (frequently have an introduction, methods, results, discussion, conclusion format). They are often (but not always) peer-reviewed.

Why search for journal articles?

- written by scholars and/or experts in a field
- provides more current information than books

Tools

Compendex and Science Citation Index (Web of Science) are both good interdisciplinary databases to find articles for all types of engineering. Use search tips/help options in each database to do the most effective searches.

Patents

Definition: a legal agreement between an inventor and the government; excludes others from making, using, or selling that invention for a limited time in a particular country country

Why search for patents?

- to learn how something works (diagrams, description)

- avoid duplication of research efforts
- identify research trends and/or licensing opportunities

Tools
A comprehensive list of patent search tools is available from the Articles/Databases tab, use the dropdown menu to find 'patents' and hit the go button. Note that you can only search Canadian patents through the Canadian Patent Database. They aren't indexed elsewhere.

Canadian Patents
Canadian Patent Database

American Patents
Google Patent Search

International/Multi-country Patents
Free Patents Online
PatentLens

Trade Journals

Definition: periodicals sharing news and other information of interest to a specific type of business or industry; usually published by a trade association.

Why search through trade journals?
- keep up-to-date on latest developments, including emerging technologies
- connecting with potential employers
- contacting suppliers

Tools
You can access trade journals in a couple of different ways. You can search through a database (such as Academic OneFile) to find articles; or you can find/browse through Tradepub.com and this Wikipedia list of trade magazines. You should be able to access the full-text versions of these journals through the library's website or through the magazine's website.

Standards

Definition: a published document with technical specifications to be used as a rule, guideline, or definition; created for the purpose of ensuring things work safely, behave reliably, and are produced uniformly.

Why search for standards?
- laws sometimes refer to standards, making compliance mandatory
- can be a constraint, method, or metric in your design

Canadian Standards
Canadian Standards Association (CSA)

American Standards
American Society for Testing and Materials (ASTM)

International Standards

IEEE Standards Association

Websites

An easy way to know whether a web-based source is trustworthy is using the CRAAP test.

Credibility: How recent is it? Is it that important?
Reliability: Is it about the topic you wanted? Is the information balanced?
Authority: Is the author an expert? How can you tell?
Accuracy: Can you verify the facts somewhere else?
Purpose/Point of View: Is there a bias or agenda to the writing?

Why use a website?

- provide up-to-the minute coverage and information
- may contain government publications, research reports, and conference/workshop papers

Tools

You can also use Google Scholar to search for journal articles and book chapters, accessing them through the pdf link (if given) or through the 'get it at Mac' button. Not all results shown are peer-reviewed.

Additional Help

If you encounter any trouble while researching, you can always use the Ask a Librarian service offered through McMaster. You can connect on campus or from home Monday to Friday, 10 AM to 10 PM.