GradProSkills GPL238

ENCS Graduate Research Essentials

Chloe Lei
Jan 17, 2020
Your Engineering Librarians

Danielle Dennie
Chemical & Materials Engineering
danielle.dennie@concordia.ca

Tim Walsh
Computer Science & Software Engineering, Mechanical, Industrial & Aerospace Engineering
tim.walsh@concordia.ca

Chloe Lei
Building, Civil & Environmental Engineering, Electrical & Computer Engineering
chloe.lei@concordia.ca
Overview

• Recognize the differences between major library search tools

• Conduct literature searching in Engineering Village and make use of its advanced search functions

• Make use of available tools to stay organized and track research
Library search basics
**Major library search tools**

- Discovery Search
- Library Catalogue
- Databases
- Interlibrary Loan
Subject Databases

Explore them
  - by subject
  - by type
Library Databases and Google Scholar

**Library Databases**
- Focus search within a discipline/subject
- Many options for precise searching
- Full text can be obtained most of the time

**Google Scholar**
- A broad search of the scholarly literature
- Limited advanced search options
- Full text is not usually included (can set up library links to check)
Engineering Village
About Engineering Village

- A major platform for engineering literature
- Content from core engineering databases (e.g. Compendex, Inspec, Geobase)
- Carefully selected and indexed
- Types of information: Journals, conference proceedings, dissertations, technical standards, trade magazines, technical reports…
Compendex

- Comprehensive coverage of various engineering subjects
- Over 18.8 million records from 1970 – present
- Over 1.7 million records from 1884 – 1969
- Publications from over 76 countries

INSPEC

- Physics, electrical engineering and electronics, computers and control, mechanical, production engineering, information technology and more

- Around 837,000 records from 1898 to 1968

- Almost 16 million records since 1969

- Publications from over 95 countries

Source: https://www.theiet.org/resources/inspec/about/
**GEOBASE**

- Earth sciences, ecology, geology, human and physical geography, environmental sciences, oceanography, geomechanics, alternative energy sources, pollution, waste management and nature conservation
- Over 3 million records
- 200,000 records added per year
- Publications from over 68 countries

Accessing Engineering Village

A few things to keep in mind:

• What’s the difference between Quick Search and Expert Search?

• By default, is the function “AutoSuggest” turned on?

• Should I create an account?

Engineering Village: [https://clues.concordia.ca/record=e1000983](https://clues.concordia.ca/record=e1000983)
Starting the Search

- Try to break down your topic into different concepts
- In Quick Search, you can add more search fields as needed
Starting the Search

Quick search
Search in: All fields
for: how does temperature affect rockets

Quick search
Search in: All fields
for: concept 1 OR synonym OR synonym 2, etc.
for: concept 2 OR synonym
for: Search for... e.g. transcription factors AND Jon smith

Quick search
Search in: All fields
for: temperature OR thermal effects
for: rocket engines

4 results
8715 results
Combine Search Terms

This is usually the default setting. AND is used to combine ideas together.

Use OR to combine synonyms.

If the main idea has a common use you want to exclude, use NOT to exclude that word.

Source: https://courses.lumenlearning.com/suny-fmcc-researchsuccess/chapter/search-statements/
Each article is indexed in Engineering Village

Controlled vocabulary is used to standardize the way the articles are indexed

Blockchain Technology: An Aid to the Governance of Smart Cities
Patel, Vishva Nitin 1, 2; Patel, Chhayaben Nitin 2, 3

Sources: Advances in Intelligent Systems and Computing, v 933, p 373-382, 2020; ISSN: 21945357; DOI: 10.1007/978-981-13-7166-0_36; Publisher: Springer Verlag

Author affiliations: 1 Department of Information Technology, Madhuben and Bharubhai Patel Women's Institute of Engineering, Gujarat Technological University, Anand; Gujarat, India
2 Anand Institute of Information Science, Anand; Gujarat, India

Main heading: Information management
Controlled terms: Blockchain - Data handling - Digital storage - Distributed computer systems - Economics - Hash functions - Network architecture - Peer to peer networks - Smart city

Uncontrolled terms: Decentralized architecture - Double-spending - Proof of work - Shared economy - Smart property - Transparent governance - Trust-free

Classification code: 722 Computer Systems and Equipment - 723.2 Data Processing and Image Processing - 971 Social Sciences

Database: Compendex
Thesaurus/Controlled Vocabulary

- Find synonyms and related terms
- Improve your search strategy with suggested broader and narrower terms
Try it out

1. Pick a topic of your choice. Brainstorm some keywords. Try them out in Quick Search.

2. Go through the results, explore controlled terms that are relevant to your topic.

3. Branch out or narrow down your search using controlled terms/thesaurus.

Example topics:
- How can nanotechnology make solar energy technology more efficient?
- What virtual reality techniques can be used for emergency response?
- How can integrated transportation systems reduce waste?
- What benefits and problems are present in using hydrogels to 3D print tissue for medical use?
Variations of Words

• **Autostemming (turned on by default)**

management  \(\rightarrow\) manage, managed, manager, managers, managing, management, etc.

• **Truncation (use it if autostemming is not sufficient enough)**

col*\(r\)  \(\rightarrow\) color, colour

h*emoglobin  \(\rightarrow\) hemoglobin, haemoglobin, hemimethemoglobin

*sortion  \(\rightarrow\) adsorption, absorption, desorption, resorption

comput*  \(\rightarrow\) computers, computing, computerize, etc.

Phrase Searching

• Search for exact phrases, so certain words appear together
• Both quotation marks and curly brackets would work

"social media"  {social media}
When do I use Expert Search?

- Search within specific fields that are not available in Quick Search (e.g. doi, conference code, funding number)
- Combine many fields and operators in a complex search

When searching for information related to ICT conferences, you can use the search terms (ICTC WN CF) AND (smart NEAR phone) within the Conference information. The two search terms are near to each other in any order.

Source: https://service.elsevier.com/lp-eproxy.concordia.ca/app/answers/detail/a_id/25633/c/10545/supporthub/engineering-village/
Refine Results with Facets

- Common criteria such as “Document Type”, “Controlled Vocabulary”, and “Year”
- Other specialized ones include “By Physical Property” and “Remove Duplicates”
The Article Record

• Very detailed metadata about the article
• Options to check full text, share, or download the record
• Link out to other relevant content
Getting Full Text

1. “Full text” button, if one exists
2. “Find it @ Concordia” button
3. Check Library Catalogue for print copies & use Article Delivery Service to get a scanned copy
4. Use Interlibrary loans
Try it out

1. For the same topic or a different topic, conduct a search (make use of the tips discussed).

2. Go through the results and identify 2 articles of interest. Are the full text available?

3. Set up an account to explore personalized options (e.g. create alerts, save searches, export/download results,)

Example topics:
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- What virtual reality techniques can be used for emergency response?
- How can integrated transportation systems reduce waste?
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Stay organized & Track research
Zotero - Managing References

• Make use of a reference manager such as Zotero to help organize your literature

• A browser plug-in that makes saving content easy while searching

• Integration with MS Word and Google Doc makes citing and referencing easy when writing

• The Library a guide on using Zotero

Getting Started

http://zotero.org
Tracking Research Impact

- There are metrics and indicators to help analyze research trends and impact
- Citation counts, h-index, journal impact factor, altmetrics…
- The 2 main citation databases: Web of Science, Scopus
- **Bibliometrics and research impact guide**
Getting help

- Ask us desk
- Live chat service
- Contact your subject librarian

Engineering Subject Guide: [https://www.concordia.ca/library/guides/encs](https://www.concordia.ca/library/guides/encs)