

CHEM-E0105

Academic Learning Community

Session 2: Literature Search in Aalto University

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Aalto University
School of Chemical
Engineering



Course News

Feedback from last week's quiz

- Many seem to be enthusiastic of the course
→ *I hope we can fulfil the expectations!*
- Academic entrepreneurship & career development, studying skills, communication, Thesis Review were seen important
- Some the topics of this course to be covered earlier
→ *we know the B.Sc. curriculum: there is some repetition, but we aim at different kind of approach and going deeper into the topics*
- Some concerned of heavy workload
→ *3-5 cr = 81-135 h of work – if the course is in your HOPS, you must reserve enough time*



Some ambiguity in schedule information

- Sorry – still learning how to cope with Sisu...
- Please follow the MC announcements and your email

Today's Programme

8:30-9:15 Scientific Article Exercise: instructions (Riikka)

9:15-10:00 Workshop on information search in Aalto (Kyösti & Kirsi)

After the session, a quiz will open (Quiz 2). Everyone is expected to answer this quiz. If you pay attention during this session, the quiz will be very easy to complete!

Comments about the Workshop

Most of you have written B.Sc. thesis – congratulations!

- Many have performed numerous literature searches quite recently
- The aim today is to share your experiences and knowledge
→ enabling learning for you and your colleagues

Literature search is essential in science

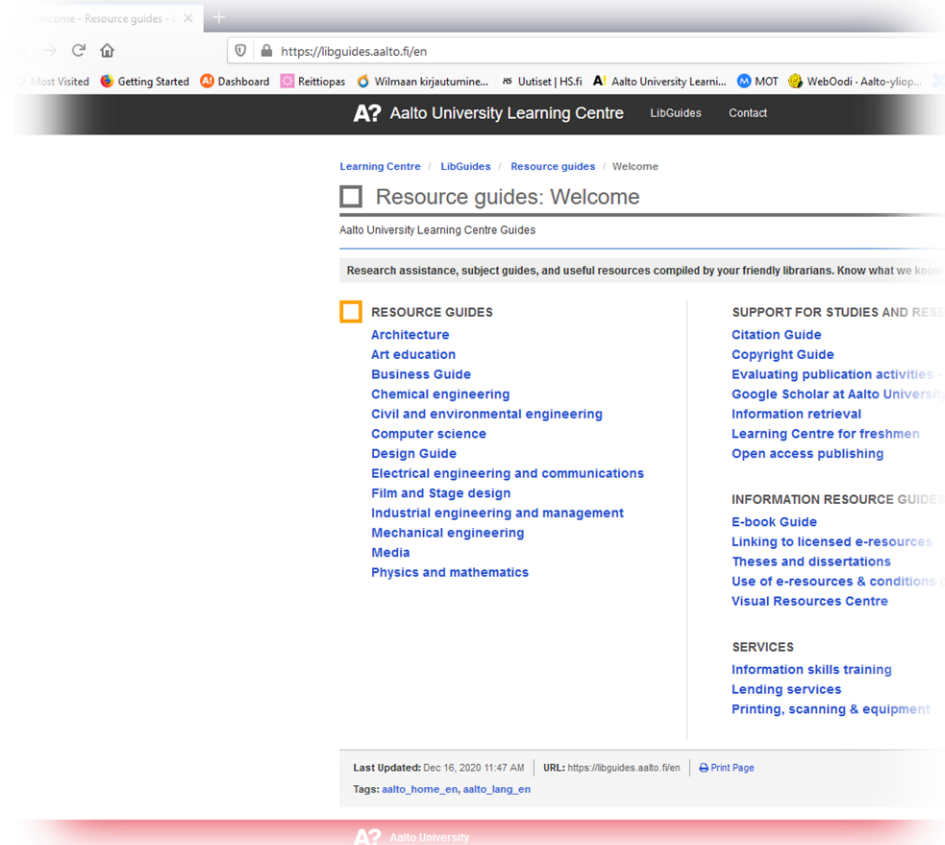
- Unfortunately, writing a B.Sc. thesis does not make anyone a specialist in literature search
→ Constant practice is required!

Be curious!

- You can try out new or less used tools – just for a change, if not for anything else!

Information Search Workshop

1. Go to <https://libguides.aalto.fi/en>
2. Discuss questions in small groups (3-4 students)
3. Share your views and ideas in a [Google document](#) (the link also available in MyCourses)



The screenshot shows the Aalto University Learning Centre LibGuides website. The browser address bar displays the URL <https://libguides.aalto.fi/en>. The page header includes the Aalto University Learning Centre logo and navigation links for LibGuides and Contact. The main content area is titled "Resource guides: Welcome" and features a list of resource guides under the heading "RESOURCE GUIDES". The list includes: Architecture, Art education, Business Guide, Chemical engineering, Civil and environmental engineering, Computer science, Design Guide, Electrical engineering and communications, Film and Stage design, Industrial engineering and management, Mechanical engineering, Media, and Physics and mathematics. To the right, there are sections for "SUPPORT FOR STUDIES AND RESEARCH" and "INFORMATION RESOURCE GUIDES". The footer of the page provides the last updated date (Dec 16, 2020 11:47 AM), the URL, and tags: [aalto_home_en](#), [aalto_lang_en](#).

Warm-Up Question

You all have already performed literature search during your B.Sc. studies, e.g. for your thesis.

- a. To introduce yourselves and to get things going, please share in the group the topic of your thesis.**
- b. Discuss your experiences and name things, which you feel that you should develop in your information search skills:**
 - maybe you have used very few tools when searching literature?
 - maybe certain tool has been difficult to use?
 - maybe finding the full texts has been challenging?
 - maybe you have found it difficult to produce relevant search terms or key words?
 - *etc.*

Students' Answers (from Google Document)

Kyösti's comments in Red

Mostly used Google Scholar, had trouble using other resources Google Scholar is a good tool but it has its limitations (see slide #11); Libguides has a lot of instructions, also you can contact Learning Centre

Learn how to assess quality of articles using impact Study Riikka's video and slides about this topic (video #5: "Impact is everything" — How is impact of journals and articles evaluated?)

Sci-Hub when articles were not able to be accessed by our institution **Do not use Sci-Hub!** It is basically illegal (violating copyright laws). You can access all the needed resources through Aalto's services, so use those! Remember that following ethical guidelines and integrity is of utmost importance in science!

Limited institution access Some resources are not available directly online (e.g. old journal articles); still, you can access them, for example by ordering from the Repository library (Aalto's instructions page)

Citation surfing was useful, easy way to find more relating to the same subject or to find background information. Yes, this is a good advice: the relevant references from useful articles are always worth of checking out!

Problem 1

You want to find information for a course essay on a general topic. How would you proceed? What type of literature would you search for? Which databases would you use and why? Which are the pros and cons of the databases you chose?

- **Examples of general topics**
 - Chemical structure and reactivity of lignin
 - Recombinant protein production
 - Thermoelectric effect
 - Melamine – structure, manufacture and applications
 - Synthetic polymers in paper and board production
 - Functionalization of materials for biological applications
 - Demand of metals for the fossil-free society

Answers 1

Find textbooks

- Electronic books available from many databases, see Libguide: <https://libguides.aalto.fi/c.php?g=410695&p=2798022>

Review articles are helpful

- Carry out a search in Scopus or Web of Science, refining for review articles

General information can also be found from theses

- Aaltodoc is the database for Aalto's theses
 - Students do not have access to the complete bachelor's theses
 - Not all M.Sc. theses are electronically available
- Can be obtained from Learning Centre*

Students' Answers (from Google Document) *Kyösti's comments in Red*

Textbooks – Knovel – (ebooks)

Libguides -> choose database according to needs (i.e., chemspider if searching with molecular formula)

Very good advices!

Google Scholar will not answer all your needs

Pros of Google Scholar

Familiar and relatively simple to use, much like Google.

Variety of materials including articles, books, conference proceedings.

Can display links to articles and books held through Aalto University Learning Centre.

See how many times an article has been cited and by whom.

Original slide by Marika Sarvilahti

Cons of Google Scholar

Does not allow users to limit results to peer reviewed or full text materials or by discipline.

Coverage is wide-ranging but not comprehensive and high scholarly quality is not guaranteed.

Weeding through results not held at Aalto is time-consuming.

Citation information is not as reliable as Scopus or Web of Science information.

KR, 2022

Google Scholar

You can set Google Scholar to read ViewIt@Aalto links also from your own computer: <http://scholar.google.com/> - Settings → Library Links → "Aalto University - ViewIt@Aalto"

The image shows two screenshots of the Google Scholar interface. The left screenshot shows the main navigation menu with 'Settings' highlighted by a red box and a red arrow pointing to the right screenshot. The right screenshot shows the 'Settings' page, specifically the 'Library links' section. Under the heading 'Show library access links for (choose up to five libraries):', there is a text input field with the example 'e.g., Harvard' and a checked checkbox for 'Aalto University - ViewIt@Aalto'. Below this, there is a note: 'Online access to library subscriptions is usually restricted to patron library password, use a campus computer, or configure your browser library's website or ask a local librarian for assistance.'

Problem 2

You find a name for a chemical compound and would like to acquire more information on it (e.g. exact chemical structure, ways to synthesize the compound, melting point/boiling point/solubility/other properties). Which tools would you use for the information search?

Answers 2

Helpful databases

- Reaxys: information on compounds can be searched by inserting the structure, CAS number *etc.*
- Knovel database also provides easily accessible information of chemical compounds

Chemical's safety data sheet

- Can be found from the supplier's web pages

Wikipedia is also a good option but citing Wikipedia articles is not always a good idea – try to find also other sources!

Problem 3

You would like to know more about citing; which type of style should you use, which reference management software can be used, how can you save the article PDFs, *etc.* Where can you find this information?

Answers 3: Citing

Consult the CHEM School's Guideline for Written Reports

- These guidelines to be used in SAE

Otherwise

- *When writing thesis, always ask your supervisor's opinion*
- *Once you have chosen your style, be consistent and pedantic!*
- Journal article: see the journal's web page for instructions to authors
- Conferences usually provide templates or detailed instructions for styles
- See instructions from Libguides

Answers 3: Reference Management

EndNote provided by Aalto University IT Services for the students, teachers, researchers and other staff of the university

Many other options are available, as well

- Zotero, Mendeley, CiteULike, JabRef (free software)
- Citavi, RefWorks, ProCite, RefManager, (commercial software)

Reference management software are based on

- Database of publications, collected by the user
- Software to include the in-text citations and reference information in the user's documents

Students' Answers (from Google Document)

Kyösti's comments in Red

How to use EndNote... See next slide for a link to self studying materials

Mendeley was easy to use with word (can choose citing style etc.)
Many students seem to be using Mendeley so it can be recommended
(I do not know the software myself)

EndNote

General information available in Libguides

Endnote Web: <https://access.clarivate.com/login?app=endnote>

Desktop version available at Aalto IT's Software Self-service Portal

Self studying material:

<https://clarivate.com/webofsciencegroup/support/endnote/>

Cite While You Write

Works together with Microsoft Word.

Makes in-text citations and reference list according to the chosen style.

You can download it to your computer.

Problem 4

If you want to find the most recent publications of a certain clearly defined topic, how do you proceed? How can you assess, which of the publications are of high quality?

Answers 4

Original research articles

- Carry out a search in Scopus or Web of Science, refining for recent publications
- No easy ways for quality assessment
 - Number of citations tells something (*i.e.*, how many times the article has been cited by others)
 - Journals are often ranked by their impact factor; also, journal's JUFO ranking is worth checking
 - Watch Riikka's video¹ on this topic!

¹"Impact is everything" — How is impact of journals and articles evaluated?

Questions, Doubts?

If you feel you need further training in literature search, check out the Information Skills Training pages in LibGuides

You can also contact Kirsi (kirsi.heino@aalto.fi), who is our contact person at the Learning Centre

Go and explore the resources!