THINK GREEN
KEEP IT ON SCREEN
BEST VIEWED AT 150% ZOOM-LEVEL IN PDF READER
THINK TWICE IF YOU REALLY NEED TO PRINT

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You can get a copy of today’s slides from our subject guides or refer to the link indicated in your handout.
As part of your FYP requirements, you need to submit a thesis/final report. The format may look similar to this (see slide). Today’s session will help you with your introduction, literature review and reference list.

We will explain how to ask 5W1H questions about your topic so that you know exactly what to look for. This is followed by how to search effectively in an academic database (using Scopus as today’s example). Then, we will briefly touch on the C.R.A.A.P test which is used to evaluate information and on citation managers which can help you create your reference list.

To help you recap the lesson contents, you will be asked to do some simple exercises from time to time during the session. The links to these exercises are also available in your handout.
1. QUESTION YOUR TOPIC

Most of you should have your FYP topics by now. Is there anyone who does not have?

It is common to observe that the first thing students would do after knowing their topics is to jump straight into searching. The mindset is “It’s just searching right, can’t be that difficult. I googled everyday”
I’m not saying this is wrong; it’s logical and a natural thing to do. But the problem is halfway through searching, you start to get overwhelmed by information overload and may not be sure how to overcome this or how to progress further.

Now there’s a common saying “If you fail to plan, you plan to fail”. Academic search is different from the normal search that you do on a daily basis in Google; you can’t just go in with a “try your luck” mentality and hope to hit the jackpot.
You have to know clearly what is it that you want to search for about your topic – How to do this? By questioning your topic.

There are many methods or frameworks that you can follow to question your topic but for today’s session, we will just introduce you to the most basic one – which is the 5W1H.
The 5W1H represents the What, Why, When, Where, Who and How questions.

**What** – to find out definition, description, examples etc.
**When** – to find out time and frequency of occurrence
**Where** – to find out place/location/country/market
**Who** – to find out people affected; influencers; decision-makers; people with resources
**Why** – to find out reasons/justifications/motivations
**How** – to find out method, process, tools, technology
Suppose your topic is on Driverless Cars. The 1st W - WHAT question typically ask things pertaining to definitions, descriptions, examples etc. For instance, What is a driverless car?

A driverless car can be described in terms of its functions, its components or through its technical specifications. Eg. Driverless cars navigate or detect objects using sensors called LIDAR (Light Detection and Ranging). But we don’t just stop here. From this first answer, we can probe further and ask more questions. Eg. Based on the information we know of LIDAR, we can ask “How do we increase the image resolution?” or “How do we reduce the margin of error since LIDAR is made up of so many movable parts?”

A question can lead to another question and does not have to be based from an answer. Eg. Why do we need driverless cars leads to What problems does a driverless car solve? Is it just transportation problems? Or is it manpower problems? Or is it energy problems?

Continue questioning until you have come up with all the 5W1H questions. Once done, you are ready to search for the answers to these questions.

This is how questioning your topic helps you determine what kind of information you should be looking for.
For a deeper probe into your research topic, you can consider to use the 6th W which we did not cover during the class. This is the WHATIF, which questions assumptions that you may not have thought of. For instance, the research into driverless cars assumes that the society, by and large, is ready to accept this technology, which may not be true.
Do Activity 1 to get a sense of the 5W1H framework. The link is also indicated in page 1 of your handout, under (3). When you’re done with the activity, there is a blue “Check” button at the bottom - you can check your answers and see if you got them correct.
Q: How to search effectively?
A: Search in a systematic way using basic search techniques.
As you do your search, you will encounter many types of information sources, so do not limit your research to just books and journal articles. Refer to this useful guide to find out how each of these sources can support your research.
For a systematic way of searching, we recommend you to follow this information search process.
This will help you to stay focused on your search and track your search progression.
This is an example of a search statement. The key takeaways regarding search statements are:

1. understanding how to use these basic search operators, i.e. Boolean operators, truncation, phrase search, brackets (which is summarized in a table in the next slide or in page 2 of your handout) and;

2. appreciating the fact that using search statements in databases tends to give you more comprehensive and relevant results, thus making your search more effective.
This table can be found in your handout page 2.
This slide explains why using basic search techniques is better than normal keyword searches.
Use the table in Slide 13 or Page 2 of your handout to do Activity 2.

When you’re done, there is a blue ‘check’ button at the bottom of the screen where you can check against your answers for every question.
Now that you have learned to use basic search techniques to create search statements, you can start searching in databases. NUS Libraries subscribe to many academic databases across all subjects; this means that you can access many high-quality research papers for free.

We will demonstrate Scopus which is a multidisciplinary database and contains up-to-date research papers on various topics, so this database will be very useful for your FYP research. Scopus contains review articles – these articles provide a summary of the key research that has been done in a particular research area, so they can help you with your literature review. Scopus also shows references used by each article and times cited (which means citation count) – we will tell you more about this later.
Use only Firefox or Chrome browser to access Scopus or any databases subscribed by the library.
Once you are in Scopus, type in this search statement and run the search. How many results do you get?
There is a checklist in page 3 of your handout. As you search and explore the features of Scopus, check against this list and make sure that you know how to do all these.
SCOPUS: SEARCH PAGE

Impose additional limits to your search, e.g.:
- Date range
- Document type
- Access type

Select fields you want to search in
By default, Scopus sorts results by the most recent published articles. We recommend you to change and sort the results by relevance instead.

If you want to see articles that are highly cited by other researchers, again, go to “Sort on:” and click “Cited by (highest)”.

It would be good for you to read these potentially important or impactful articles.
Article X has been cited by 3 other articles – Articles A, B and C
Refine your search results using filters, e.g. by year, author, document type, subject and more...
Follow steps 1 and 2 to search for review articles.

As mentioned earlier, review articles provide a summary of the key research that has been done in a particular research area, so these are very useful as you write your literature review.
If you can’t think of any suitable keywords or synonyms for your topic, this may help.
After clicking “View all”, you will see a list of all keywords used by the authors or researchers in their articles/papers that are in Scopus.
Note: search statement is auto-populated for immediate editing if no filters have been applied to the results
Hydrogenated amorphous silicon coatings may modulate gingival cell response.


The hydrogenation of silicon-based materials present a high potential for dental and implant applications. Silicon has been proven necessary for the correct bone formation in animals and humans. Notably, the addition of silicon is effective to enhance the biocompatibility of hydroxyapatite and other biomaterials. The present work aims to expand the knowledge of this effect exerted by hydrogen in the biological interaction of silicon-based materials, comparing two hydrogenated amorphous silicon coatings, with different hydrogen content, as means to enhance soft tissue cell adhesion. To accomplish this task, the films were produced by plasma enhanced chemical vapor deposition (PECVD) on titanium substrates and their surface composition and hydrogen content were analyzed by means of X-ray photoelectron spectroscopy (XPS) and Fourier transform infrared spectroscopy (FTIR), respectively. The surface energy and roughness were measured through optical contact angle analysis (OCA) and high-resolution mechanical profilometry, respectively. Coated surfaces showed a slightly lower roughness, compared to bare titanium samples, regardless of the hydrogen content. The early cell responses of human keratinoctyes and fibroblasts were tested on the above-mentioned surface modifications, in terms of cell adhesion, viability, and morphological assessment. Films with lower hydrogen content were endowed with a surface energy comparable to the literature surface. Films with higher hydrogen incorporation displayed a lower surface oxidation and a considerably lower surface energy, compared to the less hydrogenated samples. As regards mean cell area and focal adhesion density, both a-Si coatings influenced fibroblasts, but had no significant effects on keratinoctyes. On the contrary, hydrogen-rich films...
There are a few ways to save your records.

Select records that you want, then click "Add to list" or print or email.
<table>
<thead>
<tr>
<th>Document title</th>
<th>Authors</th>
<th>Year</th>
<th>Source</th>
<th>Cited by</th>
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<tbody>
<tr>
<td>Third-generation biomedical materials</td>
<td>Feng, L.L., Polak, J.M.</td>
<td>2002</td>
<td>Science</td>
<td>1500</td>
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<tr>
<td>Processing and properties of hydroxyapatite-based biomaterials for use as hard tissue replacement implants</td>
<td>Suchaneck, W., Yoshimura, M.</td>
<td>2008</td>
<td>journal of Materials Research</td>
<td>1450</td>
</tr>
<tr>
<td>Zirconia as a ceramic biomaterial</td>
<td>Picort, C., Maccario, G.</td>
<td>1999</td>
<td>Biomaterials</td>
<td>1350</td>
</tr>
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</table>
If you use citation managers like EndNote, Mendeley or Zotero, select the RIS Format. Do not select Mendeley even if you are using Mendeley.
That’s the end of the demo. We will play a short game now to help you recap what you’ve just learned.
https://kahoot.it/

Which is the tallest mountain?

0 answers

3. Click on the shape that represents the answer you see on screen.
Besides Scopus, here are some other databases that are useful for your FYP research. Generally, once you know how to use 1 database, you should be able to use any other databases as their interfaces and functionalities are similar. However, be careful about the search operators and search syntax (see next slide)

1. Web of Science
   • a multi-disciplinary A&I database, similar to Scopus
   • has 5 indexes for journals and conference proceedings, covering both Science, Social Sciences and Arts & Humanities.

2. IEEE Xplore
   • contains scientific and technical content published by Institute of Electrical and Electronics Engineers (IEEE) and its publishing partners
   • Provides full-text access in electrical engineering, computer science and electronics fields

3. ACM Digital Library
   • is the place to go for computing-related literature
   • provides full-text access to the Association of Computing Machinery (ACM) publications
4. Engineering Village
   • enables you to search multiple engineering literature databases i.e. Compendex, Inspec, NTIS and GEOBASE, all within one single interface.

5. ProQuest Theses & Dissertations Global
   • If you want to look at foreign theses/dissertations, but bear in mind that most of them are from North America.
Each database would have its own search operators or symbols. Always check the help file of the database that you are using to find out what the operators and symbols are before jumping straight into searching.

<table>
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| Truncation        | *                                           | *                                 | *                                 | *                               |
| Wildcard          | ?                                            | ?                                 | ?                                 | Nil                             |
| Phrase            | " " ( 1 ) for exact phrase                   | " " ( 1 ) for exact phrase       | " " ( 1 ) for exact phrase       | " " ( 1 ) for exact phrase |

http://libguides.nus.edu.sg/eng_research/discover/search_by_topic
3. EVALUATE INFORMATION

After you are done with searching, you need to read and evaluate the information found to ensure that they are credible before using them in your FYP report or other academic assignments.
You can use the [CRAAP Test](http://libguides.nus.edu.sg/skills/evaluate/craap), which is developed by the Meriam Library at the California State University, to help you do the evaluation. It stands for Currency, Relevance, Authority, Accuracy and Purpose. Please take a minute to read through this slide.
4. CREATE REFERENCES

It is important to acknowledge the use of other’s work. Nowadays, creating citations and reference list is much easier than in the past because there are citation managers to help you. There are a few brands in the market, but NUS Libraries currently provide support for EndNote and Mendeley.
ENDNOTE

Watch this video: https://youtu.be/AAuGdJvI3ZI

HOW DOES IT WORK?

stores and organizes references found from many sources

inserts these references into a Word document

automatically formats your references according to a predefined citation style, and more!

http://libguides.nus.edu.sg/endnote
Mendeley also has a similar cite-while-you-write function called cite-o-matic.
ENDNOTE OR MENDELEY?

NOT SURE WHICH TO USE?

Here’s a simple comparison table to help you decide. Alternatively, try both and see which one suits you better!

http://libguides.nus.edu.sg/eng_research/site/citation_managers
OTHER USEFUL TOOLS & TIPS FOR YOUR RESEARCH

- Library Proxy Bookmarkift
- Google Scholar
- Finding Hard Copy
- Document Delivery Service
#1: LIBRARY PROXY BOOKMARKLET

**When to Use This?**

When you access an article link from Google or other external websites and are prompted to pay.
**LIBRARY PROXY BOOKMARKLET**

**WHERE & HOW TO INSTALL?**

http://libguides.nus.edu.sg/proxybookmarklet/installondesktop

Instructions are browser-specific

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**Proxy Bookmarklet: Installation on desktop/laptop**

Use the library proxy bookmarklet to access EJournals or information directly from external websites (e.g., google scholar, google, email services).

- **What, why & how?**
- **Installation on desktop/laptop**
- **Installation on iPhone/iPad**
- **Installation on Android Devices**
- Proxy bookmarklet & Google Chrome
- FAQs
- Videos
- What if...

**How to install the proxy bookmarklet on the browser?**

**Introduction**

This page will show you how to create a special proxy bookmarklet for different browsers.

Once this is done, you can then use the proxy bookmarklet on any journal or database page e.g., JSTOR or Elsevier/ProQuest pages.

- **If you are using Google Scholar, please use the following official method of accessing full-text instead.**
- **If you are using PubMed, please use the following official method of accessing full-text instead.**

Both methods are more stable and secure access to full text in some cases.
LIBRARY PROXY BOOKMARKLET

SHOW YOUR BOOKMARKS BAR

After installing, the proxy bookmarklet should appear on your bookmarks bar.

Click ONCE on the bookmarklet and page will refresh.
LIBRARY PROXY BOOKMARKLET

HOW DOES IT WORK?
the NUS Libraries proxy stem "libproxy1.nus.edu.sg" is automatically inserted into the URL of an article link in your browser

✓ Use only on webpages showing a journal or an article
✓ provided NUS Libraries have subscribed the article
#2: GOOGLE SCHOLAR TIPS & TRICKS

Google Scholar searches for scholarly material including books, journal articles, conference papers, book chapters, and theses on a wide range of subjects.

- **Search Tips:***
  - not case sensitive: capital letters of search terms are ignored
  - AND: search terms are automatically combined using AND
  - OR: searches the full text of scholarly material, including citations and abstracts
  - truncation: Google automatically searches for matching and similar misspelled words
  - "phrase searching": use quotation marks around phrases (e.g. "automated vehicles")
  - OR: OR must be in capital letters, then results include either search term
  - "author:"
  - "title:"
  - "affiliation:"
  - "publisher:"

More options such as Advanced search, Alerts, My library, etc.

2.1: GOOGLE SCHOLAR LIBRARY LINKS

NUS Libraries + Google Scholar = FULL TEXT!

PDF OR HTML
before FIND IT! @ NUS LIBRARIES

Search on Google Scholar:
biomaterial* and (dental or tooth or teeth)

www.scholar.google.com

No full text?
Go to Google Scholar Settings

Follow Steps 1-5 to set up ‘Find it! @ NUS Libraries’

More information at: http://libguides.nus.edu.sg/findit/googlescholarlinks
This is an extension that you can add if you are using Chrome or Firefox browser. It allows you to search for articles in Google Scholar on almost any webpage. Watch this video to find out more.

1. Search Google Scholar on any webpage.
2. Highlight an article title on a journal article page or any well-formatted webpages related to a journal e.g. ResearchGate then click the button
3. Can also format references and export citations – but need to check on the accuracy (better to still use EN/Mendeley)
Q: Why is it necessary to check for hard copies?
A: Because it is impossible for NUS Libraries to subscribe to all online articles
#4: NO E-COPY/HARD COPY? TRY DDS

Need an article/book chapter/conference paper but not found in the library?

More information at: [http://libfaq.nus.edu.sg/faq/71271](http://libfaq.nus.edu.sg/faq/71271)
😊 THANK YOU! 😊

**Please complete the feedback forms and hand back to us.**

Contact us: askalib@nus.edu.sg