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FINDING OUT: RESEARCHING

Introduction

Throughout your time at university it will be important for you to be familiar with the library and its online searching tools and resources so that you can locate material in the library and on the web. This chapter takes you through the basic skills and knowledge you need to get started with your research.



Becoming familiar with the library

Although university libraries can be daunting, you will have to learn where things are located and how the library at your university operates. Wandering among the shelves to find a suitable book rarely works in a large academic library and may waste a great deal of time. Likewise an unplanned search of the vast array of available online resources could very easily find you swamped with information.

TIPS

- *Find out which library you will need to use.* Some universities have several campuses, and there are often libraries that specialise in a particular area.
- *Take the time to orient yourself to the online resources and find out how to get help when you need it.* Familiarity with the library's resources is also important if you undertake some or all of your course(s) online, study externally, or do not have the opportunity to come into the library regularly.
- *Take guided and virtual tours.* At the beginning of the semester, most academic libraries offer guided tours led by library staff to show you the main areas and services of the library. You will not remember everything but it is a good introduction and you can ask questions on the way.
- *Explore the library website.* Find details of library services, access an online searching tool, ascertain what electronic resources are available and get online help.
- *Collect guides and brochures.* These provide essential information such as floor plans, opening hours, and borrowing rights.
- *Visit the information desk.* The information, reference, or enquiry desk is the first place to ask for help in the library, whether your question is 'Where are

the photocopiers?’ or ‘How many people earning more than \$70000 a year cycle to work in Perth?’ The library staff at the information desk are there expressly to help you. You are not wasting their time by asking what you consider a dumb question. However, if they are besieged by enquirers or your question requires a very detailed answer, staff may refer you to another librarian or suggest you make an appointment.

- ✚ *Consult with subject librarians.* Most academic libraries have subject librarians (sometimes they are called faculty librarians or liaison librarians) who can provide in-depth assistance in the subject areas they are responsible for. Often they give tutorials and training sessions on finding information in their subject areas, and sometimes they are available to give specialised help related to a particular topic.
- ✚ *Explore online subject guides.* Many libraries provide online subject guides, which identify key references, books, e-books, journals, and internet resources. These are compiled by subject librarians and provide tips on how to find articles, referencing styles and important library news.
- ✚ *View online tutorials.* Many libraries have online tutorials to assist you with how to find information, search individual databases, and locate resources.
- ✚ *Use self-help touch screens* showing computer availability, and the location of print and photocopier facilities.
- ✚ *Get on social media.* These days many libraries have a blog, Facebook page or Twitter feed. These are often used to publicise current library news, such as new resources or a service interruption. You may find the answer to an important question here.
- ✚ *Take advantage of a virtual reference service.* Most universities provide a mechanism for you to ask a query or reference question online. This is sometimes called the ‘Virtual Reference Desk’ or ‘Ask a Librarian’. You submit your query in an email or an online form, and in some cases you may be able to chat online to a librarian.

Finding resources listed on a reading list

Your lecturer may provide you with a list of references to read before attending weekly tutorials or classes. If you have not had to find items on a reference or reading list before, knowing what to look for can make a big difference. Below is a brief guide to three key reference types often found on a readings list.

THREE KEY REFERENCE TYPES

Book

Strachan, T. & Read, A.P. 2011, *Human Molecular Genetics*, 4th edn, Garland Science, New York.

Look for the book title, which is usually italicised, underlined, or enclosed in quotation marks. A book reference includes the publisher name and city of publication. The edition is also relevant, so it’s a good idea to take note of the publication year and edition number.

Book chapter

Wilson, W. 2012, 'Ideology and aesthetics', in *The Urban Design Reader*, ed. M. Larice & E. Macdonald, Routledge Press, London.

Look for the same elements as in the book reference above, but, in addition, look for the 'in' immediately preceding the book title. This will indicate that the reference is a book chapter.

Journal article

Göran, A. 2013, 'Counterpoint and social belonging: creator and creatrix in Southwestern China', *Journal of Ritual Studies*, vol. 27, no. 2, pp. 65-81.

Look for the name of the journal, which is usually italicised, underlined, or enclosed in quotation marks. Journal article references usually include the volume and/or issue number, and page numbers. Publisher names and places aren't generally included.

Readings are often made available in a library's reserve or high demand collections, or via its electronic reserve or e-readings. Use the library's online search to locate or access these resources. The following section will help you with this.

Using the library's searching tools

The library provides a range of tools to help you find high quality information for your studies.

The discovery tool

Many libraries provide a discovery tool (search box), which makes searching across many of the library's resources, both physical and online resources, an easier process. This tool usually features on the home page of the library. To use it, type in a specific author or title, or use keywords to locate a range of materials for your assignment. Discovery tools take the place of traditional catalogue searches and enable you to find books, DVDs, journal articles, newspapers, and conference proceedings in the same search, using one simple search interface. Below are some tips for using the search box.

TIPS

- Look for the *Search Tips* or *Help* button, which will assist you in getting started along the right path.
- Refine or limit your search using these techniques:
 - If you are looking for a known item, such as a book on your reading list, use the option which allows you to limit the search to a particular group

of resources. This option may be provided in an advanced search box or separate tab. Enclosing known titles or specific phrases in double **quotation marks** will help narrow a search too.

- If you are looking more generally for information on a topic, you can search across most of the available resources from the search box and then use the limit boxes to refine your search by criteria such as date, type of resource, and whether the resource has been **peer-reviewed**.

➤ *Use the personal account options provided by the online search tool.* You can save items from your search results for later referral, emailing, or printing; and check or renew what you have on loan.

EXAMPLE OF A DISCOVERY TOOL SEARCH

Search box for searching across library resources

Sort results by date-newest, relevance, creator, or title

Advanced Search may provide options for a more specific search or known item.

Results for a search across library resources for "genetically modified food"

The search retrieves records for journal articles and books, as shown.

Availability, location, and details of item

Refine results by availability, resource type, topic, or date

The screenshot shows a search interface with a search box containing "genetically modified food". Below the search box, there are 303 results. The results are sorted by date-newest. The first result is a book titled "Eco crime and genetically modified food" by Reece Walters, published in 2011. The second result is an article titled "Genfood: Technik ohne Grenzen" from the UGB-Forum, published in 2011. The third result is a book titled "Marine polysaccharides : food applications" by V. Venugopal (Vachyl), published in 2011. The fourth result is a book titled "Les OGM à l'épreuve : des arguments" by Sylvie Berthier and Valérie Pean, published in 2011. The fifth result is a book titled "Modern biotechnology : panacea or new Pandora's box?" by Johannes Trampler and Yang Zhu, published in 2011. The sixth result is a book titled "Gefahr grüne Gentechnik? : Analyse der objektiven Risiken und subjektiv wahrgenommenen Gefahren gentechnischer Verfahren in der landwirtschaftlichen Lebensmittelproduktion" by Jens Neumann, published in 2011. The seventh result is a book titled "Safe or not safe : deciding what risks to accept in our environment and food" by Paul Pechan, published in 2011. On the right side of the search results, there are several filter options: Availability (Available in the Library (232), Online Resources (56)), Resource Type (Books (274), Articles (11), Journals (16), Volumes (8), Other (1)), Topic (FOOD BIOTECHNOLOGY + TRANSGENIC FOODS (239), AGRICULTURAL BIOTECHNOLOGY + FOREST PLANT BIOTECHNOLOGY (86), BIOLOGICAL RESEARCH AND BIOTECHNOLOGY AS HAZARDS AND CAUSE FOR ACCIDENTS (RESOUR ASSES/INCE) (48), FOOD INSPECTION + FOOD CHEMISTRY + FOOD SAFETY (PUBLIC HEALTH) (37), TRANSGENIC PLANTS + GENETIC TRANSFORMATION (PLANT GENETICS) (32)), Show 16 more, Creator (AIN Symposium (1995 : Atlanta, GA) (1), Alimentarium (Vevey) (3), Association Royale des Anciens Elèves du Institut des Industries de Fermentation de Bruxelles - CERIA - Institut Mérieux (Belgique) (2), Ausstellung "Gen-Halten Ernährung" (1998-1999 : Vevey) (2), Basel Forum on Biosafety (1)), Show 52 more, Collection (NEBIS-Verbund (303), ETH E-Collection (2)), Creation Date (Before 1985 (17)).

Source: Courtesy of ETH Zurich, ETH-Bibliothek/ExLibris Group.

The library catalogue

While the discovery tool is fast becoming the search tool of choice, a library catalogue may be used to locate information about materials available from the library and the details you need to locate them. Some libraries currently provide both as search options.

Like the discovery tool, the catalogue allows you to do a whole range of things, including:

- search for an item by author or title
- search for material on a particular subject
- find out the **call number** of items in the library
- connect to electronic journals and books as well as databases via the web address
- find out whether an item is out on loan, and when it is due back
- place a hold or reserve on a book that is out on loan, so that you are notified when it is returned
- check what books are currently on loan to you, or renew your loans
- connect to the library catalogues of other major libraries to see if they have material you need.

TIPS

- Look out for tutorials on using the system (often held at the beginning of the semester), online help screens, and remember that you can ask for assistance at the library information desk.
- Unlike the discovery tool, the catalogue does not list individual journal articles from journals and newspapers. To find articles on a particular topic you will need to use the discovery tool or the library databases. (See the section on databases on page 12.)

Locating material in the library building

Once you have searched for an item, how do you then find it in the building? University libraries often keep different types of material in separate locations. You should therefore take note of the call number of the item along with the collection or location code (essentially the 'address' on the shelves). It will help if you become familiar with different physical collections in your library, where they are, and the system used to arrange material on the shelves.

The physical collections

The common types of collections you are likely to encounter in academic libraries are listed below. The list is not exhaustive, and be aware that some libraries give their collections different names, or group them in different categories. (See also the section on electronic collections on page 11.)

COLLECTION TYPE	DESCRIPTION
The main collection	<ul style="list-style-type: none"> - Usually consists of most of the books available for loan. - The areas where they are shelved are often referred to as the 'stacks'.
The journal collection	<ul style="list-style-type: none"> - Journals (also called magazines, periodicals or serials) are publications issued at regular or irregular intervals, on an ongoing basis. - They are not generally for loan. - They are useful for highly specific or up-to-date information. - Although much of the journal literature is available electronically, some journals are still only available in print.
The reference collection	<ul style="list-style-type: none"> - Includes dictionaries, encyclopedias, and indexes. - Because reference resources are used to look up specific information rather than for general reading, they are not normally available for loan. - Many reference resources are available as online resources.
The reserve collection	<ul style="list-style-type: none"> - Also known as the 'high demand' or 'readings' collection, this collection consists of items in heavy demand, usually because they appear on course reading lists. - In most cases, reserve material can be borrowed for short periods only, and sometimes can only be used in the library. - A large amount of this material may be available on e-reserve. (See the section on e-reserve on page 15.)
The audiovisual collection	<ul style="list-style-type: none"> - Includes non-book materials such as CDs and DVDs. - These are often housed in a separate area near the equipment needed to use them. - There is a large amount of this material available in media-streaming services.

In addition to these collections, many academic libraries have other separate collections or sections: newspapers, government publications, microform, rare books, theses, and maps are among the most common. Some of these materials are available online in **digital repositories**, theses collections, or via media-streaming services.

Classification systems

Libraries use a **classification system** to arrange material on the shelves in broad subject areas. Most academic libraries use either the **Dewey Decimal Classification system** or the **Library of Congress (LC) Classification system**.

THE DEWEY DECIMAL CLASSIFICATION SYSTEM

The Dewey system divides human knowledge into ten main classes:

000	Generalities	500	Natural sciences and mathematics
100	Philosophy and psychology	600	Technology (applied sciences)
200	Religion	700	The arts
300	Social sciences	800	Literature and rhetoric
400	Languages	900	Geography and history

Within each main class there is a further subdivision. For example, the social sciences subdivisions are:

300	Social sciences	500	Natural sciences and mathematics
310	General statistics	600	Technology (applied sciences)
320	Political science	700	The arts
330	Economics	800	Literature and rhetoric
340	Law	900	Geography and history

Further subdivision leads to more specific numbers, with decimal points being added as required. The Dewey numbers for sociology illustrate the principle:

301	Sociology and anthropology
302	Social interaction
303	Social processes
304	Factors affecting social behaviour
305	Social groups
305.5	Social classes
305.55	Middle classes (bourgeoisie)
305.552	Intelligentsia
306	Culture and institutions
307	Communities

When material is arranged on the shelves, the numbers after the point are read as decimals:

575 comes before 575.09

575.137 comes before 575.2

THE LIBRARY OF CONGRESS CLASSIFICATION SYSTEM

In the Library of Congress system (Library of Congress Processing Department 1942), twenty-one letters indicate broad subject categories:

A	General works	M	Music
B	Philosophy and religion	N	Art
C	Auxiliary sciences of history	P	Literature and language
D	History	Q	Natural sciences
E–F	America	R	Medicine
G	Anthropology and geography	S	Agriculture
H	Social sciences	T	Technology
J	Political science	U	Military science
K	Law	V	Naval science
L	Education	Z	Library science and bibliography

These broad categories are further subdivided by adding another letter. For example, the social sciences subdivisions are:

HA	Statistics	HJ	Public finance
HB	Economic theory	HM	Sociology
HE	Transportation and communication	HN	Social history
HF	Commerce	HQ	Family, women
HG	Finance	HX	Communism, anarchism

Numbers are then added to represent specific topics:

H	Social sciences
HG	Finance
HG450	Investment

Your library may have a brochure outlining the classification system it uses and explaining its logic.

Call numbers

Each physical item has a call number, which is its address in the library. Some libraries refer to call numbers as location numbers. The call number consists of two main parts: the classification number and usually a combination of letters and numbers, to distinguish between items about the same subject. Libraries adopt many different practices for the second part of call numbers, but often letters from the author's surname are used (see below). A collection code is often included in the call number to indicate which collection the item is in. Ask for assistance if you are not familiar with the system in use in your library.

EXAMPLES OF CALL NUMBERS

Ref	Collection codes		Res
513	Dewey number	LC number	HE2751
V269	First letter/s of author's surname		STE.67

Using electronic collections

Less visible than physical collections, but highly significant, are electronic collections, sometimes referred to as e-resources or digital resources. These include databases, [e-journals](#), [e-books](#), and e-readings/e-reserve. As with print items, details of e-resources are listed in the library's online search tool and/or catalogue—in most cases you can connect to them by clicking on links provided

there or via the library website. In addition, many can be downloaded onto e-readers or tablet devices for viewing and/or annotating. Most e-resources can be accessed off campus if you have a valid student login or password. You can visit the library from your desktop at home or at work twenty-four hours a day, seven days a week.

Databases

You will often find an abundance of good sources at your fingertips by using your library's discovery tool. However, for some topics or assignments, another type of specialised search tool may be needed: a database. Databases are electronic collections of information in a particular subject area. They help you find books, journal articles, newspaper articles, reports, or statistical information.

TIPS

- ↘ The online subject guide will often assist you here by recommending specific databases for a topic. Alternatively, check the library website, which usually lists databases by subject.
- ↘ Some databases are full text, which means they contain the complete document, as shown in the first example below. Other databases give only the reference or **citation** for the item, often with a short summary or abstract of the document (see the second example). Many databases are a combination of both—that is, they give references for some items and the full text for others.
- ↘ Libraries subscribe to databases from many different suppliers, who have developed different software and search interfaces. The lack of uniformity means that when you search different databases, you face a variety of appearances and features. Using the combined search feature of a discovery tool, described previously, may help by allowing you to search across a number of sources simultaneously.
- ↘ In order to search successfully, read the online instructions or search tips for the database you have selected. Online help invariably covers:

Many databases provide a thesaurus of terms or suggest alternative keywords to search.

- how to enter search terms
- how to combine search terms (see page 17)
- how to limit your results (for example, by date or language)
- how to view and select records
- how to save, print, or email results.

EXAMPLE OF A SCREEN FROM A FULL-TEXT DATABASE

The screenshot shows a search results page for '450 Academic Journal Results for Advanced Search Keyword (global financial crisis) LIMITS: with Full Text and Peer-Reviewed'. The page is annotated with three yellow callout boxes:

- Refine results or limit to options (including full text, peer-reviewed).** This points to the 'Refine Results' sidebar on the left, which includes filters for document type, content type, and limit search by.
- Search results may be refined by resource type.** This points to the 'Content Types' section in the sidebar, which lists categories like Academic Journals, Magazines, Books, News, Images, and Videos.
- Click here to download full text in PDF format.** This points to the 'Full Text' links next to individual search results.

The search results list several articles, including:

- 1. EMPLOYMENT & GIG-ECONOMY FUTURE / FOR GLOBALISATION ADJUSTMENT FUND.** *Business Strategy*, Feb. 13, 2012. p386495. Word Count: 396. Effective 1 January 2012, the European Globalisation Adjustment Fund (EGF) programme provides support for workers who lose their job due to the global financial and economic crisis, in a large share of current job ...
- 2. Global Fund outbreak.** *Warren Gorham & Lamont, Canadian Medical Association Journal*, 184(1) (Jan. 10, 2012) pE11. Word Count: 151. Global Fund outbreak: The primary source of funding for AIDS treatment in the developing world has announced that it will discontinue funding new grants for the next two years because of shortfalls in contributions from ...
- 3. Goodstaff, Leo E.; Reibstein regulators: how the West created and how China survived the global financial crisis.** *J. Pragm. Cognitve Science Reviews for Academic Librarians*, 49.5 (Jan. 2012) p938. Word Count: 248. 49-2769 WBI315 MASC Goodstaff, Leo F. Reibstein regulators: how the West created and how China survived the global financial crisis. Hong Kong University, 2011. 205p. bibl index ISBN 9880803252, \$40.00; ISBN ...
- 4. The future of history: can liberal democracy survive the decline of the middle class?** *Francis Fukuyama.* *Foreign Affairs*, 91.1 (January-February 2012) Word Count: 4583. Something strange is going on in the world today. The global financial crisis that began in 2008 and the ongoing crisis of the euro are both products of the model of tightly regulated financial capitalism that emerged ...
- 5. Letter from the editor.** *Susan Glasser.* *Foreign Affairs*, 191 (January-February 2012) p1. Word Count: 572. THE HOUSE IS on fire. It's been three years and counting of the global financial crisis, yet the world's firefighters still seem just as preoccupied with fighting each other as dousing the flames. At least, that's how ...
- 6. The EE survey: the boxer lower.** *Paul C. Arvey, Michael C. Desch, James D. Lens, Daniel Malinak, Susan Peterson, and Michael J. Tierney.* *Article*.

Source: Screen shot from Cengage/Galegroup.com Expanded Academic ASAP. © Gale, a part of Cengage Learning, Inc. Reproduced by permission. www.cengage.com/permissions.

EXAMPLE OF A RECORD FROM A CITATION DATABASE

The screenshot shows a record from ProQuest Sociological Abstracts. The record is annotated with two yellow callout boxes:

- Abstract (summary) of the article** points to the abstract text.
- Subjects covered by the article** points to the 'Indexing (details)' section, specifically the 'Subject' field.

The record details are as follows:

Citation/Abstract ← Back to results Document 1 of 1

The economy of live music in the digital age
 Holt, Fabian *European Journal of Cultural Studies* 13.2 (May 2010): 243-261.
 Show duplicate items from other databases

Abstract (summary) Translate
 Popular music culture has changed significantly with the diffusion of networked digital media in the late 1990s. The present article theorizes the concept of live music in light of those changes and develops the idea of a new economy of live music. The perception of concerts as live music is central, so this is explored conceptually and historically before outlining the main elements of the new economy. Two immediate elements are the new economic centrality of live music and the categorical change in concert ticket prices. Two other elements are the rise of new and renewed event genres and the broader dynamics of the digital information society. The article integrates perspectives of cultural and performance studies.

Figures and tables Show figures and tables
 Document includes 3 figures.

Indexing (details) Cite

Subject

- Music;
- Information Society;
- Mass Media;
- Information Dissemination;
- Cultural Change;
- Centrality;
- Popular culture;
- Music industry;
- Musical culture;
- Music research;
- Musical festivals

Title The economy of live music in the digital age
Author Holt, Fabian¹
¹ University of Roskilde, fabianh@ruc.dk

Source: Sociological Abstracts. The screen shot and its contents are published with permission of ProQuest LLC. Further reproduction is prohibited without permission. Inquiries may be made to: ProQuest LLC, 789 E. Eisenhower Pkwy, Ann Arbor, MI 48106-1346 USA. E-mail: info@proquest.com; Web-page: www.proquest.com.

E-journals

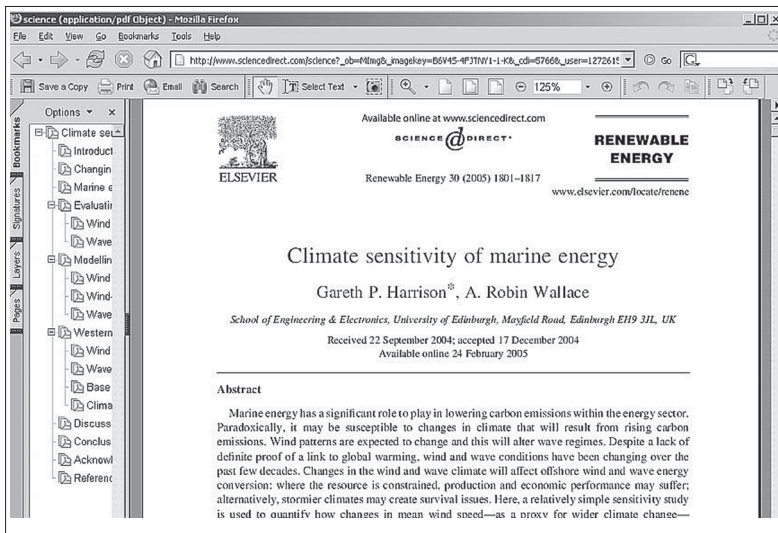
E-journals are the electronic equivalent of print journals. In some cases you will find that the library has the same journal in both print and electronic format. Most university libraries have an A–Z list of the titles of e-journals they subscribe to on their website. You could also check the online search tool. Remember to check the dates that an e-journal covers—often e-journal subscriptions do not go back many years.

Be aware that although e-journals are convenient, not all print journals are available electronically.

When using e-journals, you will find that in some cases they do not display on screen with the same appearance as the printed version; you may get the text of the article without graphics or the original formatting. **PDF** full text, if available, is a good choice as it looks like the printed version.

EXAMPLE OF AN E-JOURNAL

The example shows the first page of an article.



Source: Harrison, G.P. & Wallace, A.R. 2005, 'Climate sensitivity of marine energy', *Renewable Energy*, vol. 30, pp. 1801–17, with permission from Reed Elsevier.

E-books

E-books or e-texts are full-length books on the web. They can be read online or downloaded to your PC, laptop, or tablet device for offline reading or printing. In addition, many are made available in formats for download to an e-reader. There are two types of e-books: those in the public domain that are available free to anyone and those purchased, or subscribed to, by the library for university staff and students only. Some libraries purchase e-books that can be 'borrowed' for a certain loan period and checked back in after use.

EXAMPLE OF AN E-BOOK

The screenshot displays the 'cbook' interface for 'Communication for Business'. At the top, a search bar prompts the user to 'Search for specific keyword/s within cbook'. The left sidebar contains a navigation menu with sections like 'my library', 'Prelims', 'Introduction: Foundations of Communication', 'Fundamentals of Written Communication', 'Interpersonal Communication', and 'Nonverbal Communication'. The main content area shows a text excerpt about Nonverbal Communication (NVC), with a yellow highlight box over the word 'emotions'. A 'Notes and Highlights' panel on the right allows adding notes, with a 'Remember this for the exam' note already present. A yellow callout box at the bottom right states: 'Highlighting and note-taking functions allow you to take notes for future reference'.

E-reserve

As with the reserve collection, e-reserve consists of material recommended by your lecturers. These may be electronic versions of lecture notes, journal articles, chapters of books, e-books, or exam papers. You can access e-reserve through the discovery tool or catalogue.

Finding information for your assignment

When you are faced with an assignment requiring library research, the abundance of information can be overwhelming. Where do you start?

A logical approach to finding and using information is to devise a plan or search strategy. A **search strategy** should be tailored to the research problem, but it would usually follow the steps outlined below (and illustrated on page 24), proceeding from general sources to more specific ones.

Steps in a search strategy

Finding the appropriate resources is straightforward if you develop an effective search strategy.

Step 1: Analyse the topic

- Establish the precise meaning of the question and the purpose of the assignment. You may find the glossary at the end of this book helpful for this step.

- Highlight the main concepts or important words (keywords).
- Make a list of words or phrases with the same or similar meaning to the keywords. Include alternative spellings (for example, colour, color), alternative endings (for example, environment, environments, environmental), and common abbreviations and **acronyms** (for example, GFC for Global Financial Crisis).
- Identify the type of information you need: background information; specific facts/statistics; theories for analysis and comparison; current research or historical views.

Step 2: Obtain background information

- Make sure you understand the meaning of terms or concepts in the question. Refer to the appropriate chapters in recommended textbooks, as well as books and articles on your reading list.
- Consult subject-specific dictionaries and encyclopedias for any new terms, summaries of theories, and an overview of the topic. Remember that encyclopedias are usually a starting point, not the end point, in looking for information for assignments at university level! If the terms are still no clearer to you, consult your lecturer.

Step 3: Conduct a search

Use your library's discovery tool to

- Find out what books or e-books about your topic are readily available. Books are a fast and convenient source of information when you need a lot of information, summaries of research, or historical information. Books also help to put your assignment topic into an overall context.
- If you locate books highly relevant to your topic in the library, take note of other useful-looking references included in their bibliographies.
- Identify some relevant journal articles in your search results. Using a variety of high-quality sources is a good idea, as it shows you have researched your topic thoroughly. Journal articles are particularly important where current material is

Print your search history so you have a record of what you have already tried or what has worked, in case you need to reproduce results or try the same search in a different database.

required. You can often refine your search to scholarly, including peer-reviewed, articles by ticking the appropriate box.

- If you find the search results are too broad, refine your search by selecting additional subjects from the subject boxes provided. For additional tips on tailoring your search, see the section on search strategies below.
- If your topic is highly specific, you may need to use a database to locate journal articles or statistical information. Check your library's web pages to see which databases are recommended for your subject.

SEARCH STRATEGIES FOR DISCOVERY TOOLS AND DATABASES

- ✎ Databases and online search tools use the connectors AND and OR to combine terms. AND is used to combine different concepts: for example, smoking AND cancer. AND narrows the search results by finding only items that contain both the terms. OR is used to combine alternative or similar words: for example, smoking OR cigarettes. OR broadens the search results by finding items that contain either of the terms.
- ✎ Enclosing specific phrases in double quotation marks will limit or narrow a search to only those records that include the exact phrase: for example, “genetic engineering”.
- ✎ After running an initial search, review your results. Often you will find that the first results are not relevant—that there are too many references, or not enough. You may need to refine your search by:
 - adding more keywords
 - removing some keywords
 - using more specific terms
 - using more general terms
 - combining terms in a different way
 - limiting the results
 - trying another database.

Step 4: Locate the information

If you are using a full-text database, view the article, then print it, save it to a USB, or email it to yourself.

If you are using a citation database, view the references, then print, save to USB, or email them to yourself. Make sure you get the full details of each reference. If the database you are using does not automatically indicate which of these items the library holds, check for availability using the shortcut link to library holdings or use the discovery tool or catalogue. If you are using the catalogue, remember to search for the title of the journal, not the title of the article. Not every journal indexed in the database will be available in your library. If your library does not have the journal you are after, it may be worth checking other major libraries in your locality.

Shortcut links in databases check for the full text or library holdings.

Other sources of information

The web

Sometimes the information you need is most easily available from the web. Examples are the latest news, government or company information, or popular opinion.

- Check your library's website for subject guides to internet resources. These are high-quality sites selected by librarians for a particular discipline.
- Education (.edu) or government (.gov) sites can be an excellent source of information, especially if you are looking for some specific information: for example, a company website.

Using the advanced search page in a search engine, you can often limit your search to education sites (.edu) or government sites (.gov), by or country: for example, Australia (.au).

- To find other information on the web, use a **search engine**.
 - Read online search tips to find out how to use the search engine effectively. Search engines often have an advanced search page that gives you additional options for making your search more specific.
- Be careful when using information from the web, though. See below.

PUBLICLY ACCESSIBLE WEB SOURCES VERSUS LIBRARY RESOURCES

CHARACTERISTICS OF PUBLICLY ACCESSIBLE WEB RESOURCES	CHARACTERISTICS OF LIBRARY RESOURCES
Anyone can publish on the web. Web pages are not subjected to an editing or review process.	
Unlike material that is published in print journals, online material is often not edited or reviewed before publication.	Publishers' reputations rely on accuracy.
The information may be inaccurate, disreputable, or biased.	Librarians carefully select books, journals, databases, and websites for quality content.
Information is temporary and can disappear.	Libraries keep material permanently or until no longer required.
The focus may be on quantity rather than quality.	The focus is on quality rather than quantity.

CHARACTERISTICS OF PUBLICLY ACCESSIBLE WEB RESOURCES	CHARACTERISTICS OF LIBRARY RESOURCES
The web is not organised or controlled by anyone. Search engines can find web pages but no one search engine covers more than a small portion of the web.	Resources are organised and catalogued to make the search easier.
They are good for public opinion, a wide range of ideas, quick facts, current news, and information about organisations and companies.	They are good for information that is reliable, accurate, authoritative, scholarly, comprehensive, and up to date, as well as historical information.
Web resources are mostly free, but some sites charge.	Most information has been purchased.
You need to be self-sufficient.	Libraries provide trained staff to assist you.

EVALUATING WEB PAGES

QUESTION	HOW DO YOU ANSWER IT?	WHAT DOES IT IMPLY?
Did you find the page or site through a sponsored link?	Some search engines will direct you to sponsored links first. These are usually identified as such.	Information distributed with commercial intent is not always 'balanced'.
From what domain does the page come?	<p>Look at the URL (Uniform Resource Locator). Is the domain, for example:</p> <ul style="list-style-type: none"> - commercial (.com), - educational (.edu), - government (.gov), - non-profit (.org), or - miscellaneous (.net)? <p>What country is it from? (e.g., .au for Australia; .nz for New Zealand; .ca for Canada [note: USA-based sites typically have no country identifier]). A web search for country domain names will yield full lists.</p> <p>Consider whether the domain and country seem appropriate for the site.</p>	Consider the appropriateness of the domain to the material. Is this kind of agency a fitting one for the material being presented? Is the material from the right place?

QUESTION	HOW DO YOU ANSWER IT?	WHAT DOES IT IMPLY?
<p>Who or what agency wrote the page and why? Is the agency reputable?</p>	<p>Good places to start are the banner at the top of the page or any statement of copyright, which is typically located at the bottom of the page.</p> <p>Alternatively, look for information under links associated with the page and entitled 'About us', 'Who we are' or 'Background'.</p> <p>Authoring agency details are sometimes located in the URL between the http:// statement and the first / (forward slash), or immediately after a www statement (e.g. www.abs is associated with the Australian Bureau of Statistics and www.maf with the NZ Ministry of Agriculture and Fisheries).</p> <p>Try truncating back through the URL to see what you can find out about the authoring agency. That is, starting from the end of the URL, delete one by one each phrase ending with a / (forward slash), pressing enter after each deletion. This may generate new web pages that provide insights into the origins of the page you planned to use.</p> <p>It may also be useful to query the authoring institution's name through a search engine. This may reveal other information that points to funding sources and underlying agendas.</p>	<p>Web pages are written with intent or purpose—and it is not always the best intent!</p>
<p>Is this someone's personal web page or part of a weblog ('blog')?</p>	<p>Look for a personal name in the URL. This is typically shown in the URL after a ~ (tilde); % (per cent symbol); or /people/ or /users/ statement (for example /~jtrout/).</p> <p>A blog can often be identified as such through its title (e.g. Wired Campus Blog); its URL, which may contain the word 'blog' or the name of a blog hosting platform such as Wordpress or Blogspot; or in web page text introducing the blog.</p>	<p>The fact that information is presented on a personal page or 'blog' is not necessarily a bad thing. Indeed, blogs of great value are being written, for example, by people with media connections, without the oversight of an editor. However, you will need to find out whether the author is an expert, credible source. This information may be set out on the site you are looking at.</p>

QUESTION	HOW DO YOU ANSWER IT?	WHAT DOES IT IMPLY?
		If not, use a good search engine (e.g. Alexa, Bing, Google, Yahoo) to query the author's name. If you cannot get any insights into the author (e.g. their credentials, professional role), think seriously about whether you should use information from the page.
When was the page created or last updated?	Look at the bottom of the web page. This is usually where a 'created on' or 'last updated on' statement is located.	Old pages may contain outdated information. In almost every case, undated statistical or factual information should not be used.
Is the content and layout of high quality?	Check to see if the page looks well produced and that the text is free of typographical errors and spelling mistakes (translated foreign sites may be an exception). Where possible, confirm the plausibility and accuracy of data or other information presented by comparing it with other good sources.	Scruffy, poorly set out web pages do not necessarily contain inaccurate information but they should cause you to question the meticulousness of the author in their information gathering and presentation.

Adapted from Barker (2007) and Beck (2009). Barker, in particular, offers very useful and detailed advice on assessing web pages.

Librarians

If you are still having trouble finding information on your topic, ask for assistance at the information desk.

Step 5: Evaluate the information

When you are undertaking tertiary studies, your lecturers will expect that the information you gather for assignments will be from high-quality, reputable sources. In particular, you may be asked to find articles from scholarly journals, peer-reviewed articles, or research articles. Regardless of whether it is stated in

the assignment criteria, there will be an expectation that you are using such high-quality sources.

Scholarly journals, or **academic journals**, contain articles that have been written by and for academics or researchers in a particular field or subject area. One of the main characteristics that distinguishes a scholarly journal from a popular magazine is that the data has been thoroughly checked (University of Buffalo 2007). Scholarly journals do not generally contain advertising material and the articles often contain abstracts, research findings, data, and extensive bibliographies.

Peer-reviewed or refereed articles have been reviewed by peers or experts in the field of study before publishing. There are some resources that may help you to determine whether a journal contains peer-reviewed articles. Some libraries subscribe to Ulrich's Periodicals Directory, which indicates whether the journal is peer-reviewed. Otherwise, you can often find this sort of detail if you visit the journal **homepage** on the internet.

Research articles contain the results of research and usually contain quantitative data, analysis, methodology, and findings.

One of the benefits of using the library's resources is that material retrieved from a search is more likely to have come from a quality source than a web search. You can often limit your search to peer-reviewed or refereed articles.

Using resources made available through the library will put you well on the way to finding high-quality information and higher grades for your assignments.

QUESTIONS TO ASK WHEN EVALUATING INFORMATION

- ✎ Is the information found relevant to your topic? Does it address the topic and support the arguments?
- ✎ Is the information current? (This may not be important in some fields of study, such as literature, where older information may still be valid.)
- ✎ Is the information reliable? Was it published by a reputable publisher such as a university press or a professional association? Generally, information from newspapers and popular magazines has less credibility than that from scholarly journals, peer-reviewed articles, and research reports.
- ✎ Does the author present facts dispassionately, or give unsupported opinions? Is the author's background and affiliation given?

EXAMPLE OF A SEARCH STRATEGY

You have been given an assignment in sociology. Your topic is as follows: 'The role of the media is important in informing and reflecting social life and cultural values in our contemporary world. Discuss this statement in relation to one of the following issues: genetic engineering, gender identity, asylum seekers.'

This is an outline for your search strategy.

- ↘ *Analyse the topic.* You are being asked to discuss the role of the media in reflecting and shaping society. The key concepts are: mass media, cultural values, and social life. You need to respond in relation to one of the issues given, and decide on genetic engineering. This is an additional concept in your search strategy. You need background information, discussion of the media's role in society, information about what genetic engineering is and its applications, and research findings.

Think about the key concepts and alternative keywords that you can use to search the literature. For our example, these are: media or mass communication, society, culture, social life, sociology, biotechnology, genetic engineering.

- ↘ *Obtain background information.* Look at the section about media or mass communication in the recommended sociology textbook or book of readings for your course. The particular issue you focus on can be searched later.

Do a keyword search using the library's online search tool on sociology, culture or society, and media or mass communications.

Identify some books or e-books on the topic. A few of those you find might be:

Gauntlett, D. 2008, *Media, Gender and Identity: An Introduction*, (online Routledge/ e-book Library).

Curran, J. & Gurevitch, M. 2005, *Mass Media and Society*, Hodder Arnold, London.

Ehrat, J. 2011, *Power of Scandal: Semiotic and Pragmatic in Mass Media*, University of Toronto Press, Toronto.

- ↘ *Identify some journal articles on the topic.* You may need to add some additional terms to focus on the topic you have chosen: for example, "genetic engineering" OR biotechnology. Remember, you can limit results by date or whether they are peer-reviewed. [Alternatively, you may wish to use a key sociology database such as Sociological Abstracts].

The results uncover several relevant articles, including:

Poláková, M. 2014, 'Culturality in Mass Culture', *European Journal of Science and Theology*, vol. 10, supp. 1, pp. 131–142.

Ten Eyck, T.A. 2005, 'The media and the public opinion on genetics and biotechnology: mirrors, windows, or walls?', *Public Understanding of Science*, vol. 14, no. 3, pp. 305–16.

Augoustinos, M., Crabb, S. & Shepherd, R. 2010, 'Genetically modified food in the news: media representations of the GM debate in the UK', *Public Understanding of Science*, vol. 19, no. 1, pp. 98–114.

- ↘ *Locate the information.* Link to, print, save, or email the references and any articles that are full text.

Some assignments deal with topics that cross disciplines. Using a discovery tool can help with this, because it can search databases across a broad range of subjects.

A typical search strategy

