INTRODUCTION

This guide is intended to help all staff and students to find information whether for an essay, project or dissertation or getting started with research in Civil Engineering.

The process of systematically searching for information on a subject is often referred to as “literature searching”. This is an important skill which involves the ability to search the literature of a subject comprehensively for references (to published literature such as journal articles, conference papers and books and other factual information such as computer programs). There are different ways to do this, but it may be worth including the following steps:

1. Define Your Subject

This may be difficult at first because you may be unsure about what exactly the assignment is about. You may need to find definitions, or at least locate a description, of those aspects of your work which need clarifying.

You should use some of the specialised encyclopaedias, handbooks and dictionaries which can help by clarifying a definition or suggesting further reading.

Try these reference books: – the print ones will mainly be found in the Science Reference Collection in Zone LGC of the Main Library, the electronic ones (those without a classmark/shelfmark) via FindIt@Bham.

**CRCnetBASE**: ENGnetBASE in FindIt@Bham. Engineering titles only.
A searchable and browseable collection of over 1,000 online handbooks all providing full text. Includes such titles as *Mechanics of Composite Materials, Powder Technology Handbook Handbook of Metallurgical Process Design.*

**Knovel**
An online collection of authoritative science and engineering reference books, from several publishers. Includes analytical tools to enable you to analyse and manipulate the data in these books. Titles listed on FindIt keyword search (Library catalogue)

**CRC Materials Science and Engineering Handbook** - in ENGnetBASE (see above). Print at Science Reference TA 403 C.
Tables of data about properties of materials.

**ASM Handbook**
Handbook covering the main topics in material sciences. A multi-volume print version is available at Science Reference q TN 671

**ASM Metals Reference Book**
Science Reference q TA 459 A
Data tables of the properties of metals.
FindIt@Bham is a service providing access to a wide range of resources from electronic journals to databases to eprints and electronic books. It is also where you will find the Library Catalogue. Users need to log into FindIt@Bham using their Active Directory (ADF) username and password (also required for using Canvas and email). Once logged in you can choose from a number of options such as Everything, Library Catalogue, Find Databases, Article Search, UoB Research & Publications and eJournals & eBooks. Find Databases includes the option to discover what resources are available in computer science. Favourite eJournals and resources can be stored in your eShelf.

FindIt@Bham can also be accessed directly from the Library Services website (www.intranet.birmingham.ac.uk/library) or from the portal (www.my.bham.ac.uk) tab to my.library.

2. Find Books

At University of Birmingham:

You can find books via our FindIt@Bham Library Catalogue. Search by author, title, keyword or classmark to find information in the library on your subject.

Most of the books you will need will be in the Science and Engineering Subject Area (Zone LGC of the Main Library)

At other libraries: All university libraries, as well as many public and special libraries, make their catalogues available free on the web.
If you are looking for a book that is on your Reading List and cannot locate a copy on FindIt, please contact our iRecommend service with an email to irecommend@contacts.bham.ac.uk giving the details of the book, the name of your Course Tutor, Course Title and module number (if known).

**Bookdata Online:** ([www.neilsonbookdataonline.com](http://www.neilsonbookdataonline.com)) is a searchable database of books providing global coverage. The service is updated daily and has powerful searching capabilities, including the option to search by chapters and contents.

2. Finding Journal Articles

Journals can also be referred to as periodicals and are published on a regular basis. They are an important resource as they are where the most up to date research is published. To find journal articles on a subject it is often best to use abstracts, indexes or bibliographies. An index usually gives only a brief reference containing author, title and periodical details, but often an abstract is included providing a summary of the article. Sometimes chapters from books and technical reports are indexed too. The most frequently used abstracts and indexes in Metallurgy and Materials are available as databases which you can search via FindIt@Bham.

**Finding Databases**

To find the databases that Library Services subscribes to, you must make sure that you are logged in to FindIt@Bham with your University username and password. Once you have done this, select Find Databases from the top right hand side of the screen. This will open a new search box. You can search either by the name of the database using the Search by Name tab or you can browse a list of resources in your subject by using the Search by Subject tab.

Resources listed on FindIt@Bham under Metallurgy and Materials include:

| Abstracts in New Technologies and Engineering (ANTE) |
| A ProQuest database – see below. |
| ANTE indexes over 350 journals, magazines and newspapers on topics including: environment and safety; energy electrical and power engineering; communication; materials and metallurgy; measurement, testing and instrumentation. |

| Compendex: available from Ei Village |
| Compendex is an important database covering 6,500 + journals and conference proceedings in engineering and applied sciences. Coverage goes back to 1884. |

| Polymer Library |
| The Polymer Library covers all aspects of the rubber and plastic industry. Coverage is international with records from 30 countries, including Japan and China. Records start from 1972 and the database is updated twice a month |

| ProQuest - Technology Research Databases. |
| A collection of over 20 engineering specific databases. To see the constituent databases click on the ‘Searching 10 databases’ link on the blue bar at the top of the page and then expand the Technology Research Database entry and sub-entries. You can then create your own set of databases to search. The ProQuest databases are particularly strong on material science, with the ProQuest Materials Research Database including Ceramic Abstracts/World Ceramic Abstracts, Corrosion Abstracts and METADEX which is the leading metals bibliographic database. |
SciFinder
SciFinder is the online version of Chemical Abstracts, and is the largest bibliographic database for the chemical sciences. It indexes the chemical literature in its widest sense; thus medicine, environmental science, chemical engineering, materials science, earth science and many other disciplines are included. In addition to the usual title/author/keyword searching there are chemical structure and reaction searching and CAS registry number searching. Journal articles, conferences and importantly patents are indexed, besides other publications.

Science Citation Index Expanded on ISI Web of Science
This index covers more than 6,500 journals across a wide range of scientific disciplines, and is one of five databases that make up the Web of Science, which is accessible via the ISI Web of Knowledge. The database covers material from 1900 onwards.

All of these services are available via FindIt@Bham.

3. Finding Journals In Our Libraries

Once you have found the details of articles which interest you, use the Library Catalogue on FindIt@Bham to see if they are available in the Library. To do this, type the name of the journal into the Search Box and select Library Catalogue. NOTE – You need to search for articles using the JOURNAL TITLE, not the title or author of the individual articles. If the Library subscribes to the journal, the catalogue will list the shelf mark, the years covered and whether it is held in print or electronic format.

Finding Electronic Journals
Many journals are available in electronic format via FindIt@Bham. Use the eJournals & eBooks Only option under Library Catalogue for this search. Look out for the View Online option on the title entry when your results are returned.

4. Find Information on the Internet

Try these sites:

Internet Materials Engineer. http://www.vtstutorials.co.uk. This is an interactive tutorial to help you learn how to find and use Materials Science resources efficiently on the internet. You will also build up a list of key Materials Science sites as you work through the tutorial, which takes about an hour. This is an interactive tutorial to help you learn how to find and use materials science resources efficiently on the internet. You will also build up a list of key materials science sites as you work through the tutorial, which takes about one hour.

Institute of Materials, Minerals and Mining www.iom3.org
This site describes the activities of this UK professional body, and includes a list of links to other sites which covers most of the Web pages of universities active in this field.

ASM the Materials Information Society www.asm-intl.org/

Scirus www.scirus.com/
A science search engine which only gives results from evaluated academic sites.
5. Use Other Sources of Information

a) ASTM Digital Library.
Full text of technical standards issued by ASTM International (formerly the American Society for Testing and Materials) covering materials, products, systems and services. Topics covered include Metallurgy, construction, paints, rubber, textiles, and water and energy technologies.

b) Barbour Index Professional Series
Full-text searchable database of UK based health and safety information, including environment and food safety information. Contains regulations, guidelines, articles, summaries of key documents and Guides which provide a quick overview of a topic. Onscreen help is available.

c) British Standards
Full-text of all British Standards in pdf format. These standards are officially approved specifications covering methods of testing, terminology, performance, construction requirements and codes of practice.

d) ESDU Database
The Engineering Science Data Unit Database consists of validated engineering design data for a wide range of subjects, including aerodynamics, engineering structures, fatigue, fluid mechanics, stress and strength and tribology. Onscreen help is available

e) Patents Information
This Library Services Guide includes the benefits of using patents as an information resource, recognizing references to patents, and obtaining material from a patent library. It also provides links to patent databases.

f) Chemical Information
Reaxys
Reaxys is a large and powerful chemical information system which includes comprehensive information on millions of chemical substances and reactions. The two main components of this service are:
Beilstein - a source of organic chemical information, containing structural data and general information associated with over 7 million compounds.
Gmelin - which covers inorganic and organometallic chemistry.
Access to the Reaxys service is via the web. For details see the FindIt record. There is also self-training material available at www.info.reaxys.com/training-center

g) Special Collections
For those of you seeking something a bit out of the ordinary, try De Re Metallica by Georgius Agricola. This 16th century scientific classic was the first book on mining which took a scientific approach and describes the medieval art of metallurgy. The detailed line drawings illustrating the various specialized techniques used in mining are of particular importance. The original Latin is in the Cadbury Research Library, but Main Library has a translation at qTN 144 A, and you can also read the translation online thanks to Project Gutenberg on FindIt@Bham.

7. Keep Up To Date

If you are undertaking a project over a period of time, you might find it useful to set up email alerts so that each time a relevant article is published you are alerted to it.

ZETOC is an electronic service which allows you to set up email alerts to new articles from particular journals or on particular subjects.
Many bibliographic databases or electronic journals services also have their own current awareness/alerting service.

8. Citing Your References

It is useful to keep systematic records and follow the advice in the Preparing and Quoting References guide www.intranet.birmingham.ac.uk/library/harvard. Check with your Tutor which referencing system you should use. The main ones are Harvard (author-date) and Vancouver (numbering).

You should include a list of the references that you have used at the end of your piece of work, and it is easier to gather this information as you go along.

More information about citing references and using reference software packages such as RefWorks or Endnote is listed on the Icite website at www.intranet.birmingham.ac.uk/icite

9. Get More Help if You Need It

Web pages www.intranet.birmingham.ac.uk/library

Just Ask!
Via: www.intranet.birmingham.ac.uk/library/justask
Tel: 0121 414 5828
Just Ask! Is an instant messaging service where you can talk to a librarian in real time and share web pages. If Just Ask! is off line you can send us your question 24/7 using the Just Ask email form.

Information Desks
The Information Desks are available for support and assistance with the information resources for your subject area. You can find these at the Reception and Information Desk in the foyer of the Main Library, and in the site libraries.

Appointments
If you need further help in researching a subject for an assignment you can book a session with a subject specialist in Library Services. You will be given help and advice on how to research your subject, which sources to use, help with electronic sources etc. Details are available from www.intranet.birmingham.ac.uk/subjectsupport or the Reception and Information Desk in the Main Library.

Other relevant guides

You can find other useful information at:
www.intranet.birmingham.ac.uk/as/librarieservices/library/contact/how-do-i.aspx

All Library Services documents are available in other formats. Please contact Library Services for information https://universityofbirmingham.ac.uk/library/justask

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