

ENGINEERS: what can your academic library do for you?

Academic libraries provide **vibrant study environments**, employing the **latest technologies and methods** to meet both your needs as a busy engineering teacher and researcher, and those of your engineering students. The term 'library' also covers learning resource centres and both physical and virtual learning spaces.

Most academic libraries employ **Subject Librarians** (also called Liaison Librarians or Academic Librarians) with specific responsibility for meeting the needs of a particular department or faculty. Find out who your **Engineering Subject Librarian** is and arrange a meeting – they'll be delighted to talk you through your local library and information services. Subject Librarians rely heavily on their counterparts within the departments known as **Library Reps** who are usually their first port-of-call if they want to communicate with the department as a whole.

How can Libraries help your TEACHING?

Textbooks: meeting demand

A significant portion of books students have on their reading lists are core texts. Traditionally students would have bought these books. Today's impoverished students will rely more heavily on the library. To meet demand, your Library will probably have guidelines on their **books:student ratio** for high-demand texts. You may be invited to enter your recommendations onto a **reading list system** which automatically updates the Library whenever new items are required. Other methods of meeting demand include:

- **Ebooks** - electronic versions of the high-demand texts, allowing larger numbers of students to access them simultaneously.
- **Short loan collections** – A subset of high-demand printed books only available to borrow for a few hours. (Note: This doesn't tend to suit the heavy timetable of your average engineering student).
- **Electronic Reserve collections** - where libraries digitise high-demand materials (book chapters and journal articles) and make them available online.
- **Course Packs** - where collections of chapters and materials are photocopied and distributed in a pack to all students on a course.

Not just books: specialist engineering information

Although some engineering modules may not recommend any textbooks, all engineers require information: **legislation, product information, standards and data**. A lot of this information is now available electronically. Examples of some of the services your library may provide access to are:

- **British Standards Online** (<http://www.bsonline.bsi-global.com/server/index.jsp>).
- **LEXIS NEXIS** (<http://www.lexisnexis.com>) for case law as well as news coverage.
- **ESDU** (<http://www.edsu.com/>) for validated engineering data.
- **Compendex** (<http://www.engineeringvillage2.org/>) covering citations from thousands of engineering journals and conferences.

As a significant part of student learning occurs outside the classroom, requiring information and resources not provided in class, you could talk to your Subject Librarian about the ways in which you can work together to assist your students to become better **independent learners**.

So much to learn: Librarians as Teachers

The UK Standard for Professional Engineering Competence (UK-SPEC www.uk-spec.org.uk/) requires that Chartered Engineers are able to “conduct appropriate research, and undertake design and development of engineering solutions. This could include an ability to:

- Assemble the necessary resources...[and]
- Collect, analyse and evaluate the relevant data”.

Engineering Subject Librarians are able to enhance your students’ ability to find resources and evaluate information by providing tailored teaching in the following areas:

- **Specific databases** (e.g. Compendex).
- **Literature searching** (e.g. finding information for final year projects).
- **Citation, referencing, and plagiarism** (the importance of the former to avoid the latter!).
- **Bibliographic software packages** (e.g. Refworks, Endnote).

Of course, the best way of teaching what Librarians call ‘information literacy’ is to embed it (and assess it) as part of an existing module. A good time to do this is when teaching Engineering Design: show the students the wide variety of (non-Google!) information sources out there, and show them how they can improve their design. Then make “appropriate use of information resources” one of your marking criteria. Talk to your Subject Librarian for more ideas.

What other services do Libraries offer?

Takes all sorts: flexible study spaces

A lot of engineering courses now require students to work in groups clustered around a PC or whiteboard. However, at exam time many students still require traditional library silence. Most University Libraries now provide a wide variety of study spaces including:

- **Open-plan group study spaces** where talking, food, drink and mobile phones are allowed.
- **Group study rooms** – bookable, with use of PCs and data projectors.
- **Individual study carrels** – again, these may be bookable and lockable.
- **Media carrels** if you wish your students to watch particular videos or DVDs.

Open all hours: helping non-traditional students

Libraries recognise that even full-time campus-based students may have part-time jobs restricting their library time. That's why most libraries provide a special range of services – particularly with part-time and distance learners in mind – but of benefit to all. For example:

- **Long opening hours** – some are 24/7.
- **Books-by-post** – postal books service to distance students.
- **Photocopying service** – articles or chapter photocopied and posted to distance students.
- **“Ask a Librarian”** email enquiry services with short response times.

How can Libraries help your RESEARCH?

Work smarter: keeping up-to-date the easy way

Did you know that you can get lists of the latest journal articles in your field sent to your email box – or texted to your mobile phone? Many of the engineering databases offer email alerting and RSS feeds now. Tell the database your interests and let it do the work for you. Ask your Subject Librarian for further help.

Easy access: desk-top delivery

Some research back in the 1960's showed that engineers would walk no further than 90 feet for a piece of information. In the digital age we're unlikely to walk at all! How can your library save you time and effort, whilst keeping you up-to-date with new resources?

- **Electronic journals:** Most Academic Libraries will subscribe to electronic versions of journals where they exist so you can access the Library from your office.
- **Direct links from index to full-text:** Often there will be direct links from the record in the Library catalogue, or a database such as Compendex, to the full-text of the e-journal.
- **Photocopying services:** If your Library only has a print copy of the journal you want, they may provide a photocopying service and send the copy to you by internal mail.
- **Inter-library loans:** If your Library has neither a print or electronic copy of what you want, they will get it from another Library for you. Sometimes this can be delivered electronically to your desktop, saving you another trip to the Library to collect it.

Getting your name in print: where to publish

Your Academic Library will know what journals exist in your subject area and how important they are. Ask your Subject Librarian for help with:

- Compiling lists of all the **refereed journals** in your field.
- Providing a list of the **“high impact factor” journals** in your subject area using the Journal Citation Reports ((JCR) <http://scientific.thomson.com/products/jcr/>).

Writing up: managing your references

In addition to finding information for you, libraries can usually assist you with storing and citing it. Here's how:

- Most Libraries support one or more **bibliographic software package (e.g. Endnote, Refworks)** which allow you to: store, sort, and create automatic bibliographies from your references.
- Many **engineering databases interface directly** with these packages allowing you to import large numbers of references automatically.
- The **citation styles** required by a lot of engineering journals are stored within the package, allowing you to create a bibliography in the correct style, first time.
- Libraries are also able to assist with knowing **when to quote, when to cite**, and **avoiding copyright infringement** in your publications.

Change the world: using your Institutional Repository

More and more Academic Libraries are becoming the host for their Institutional Repository. This is a place where you can submit electronic copies of your research papers (either before or after publication in a refereed journal) where they will be made available on open access over the web. Why would you want to do that?

- **Visibility:** Research has shown that **open access papers are more highly cited** than those that aren't.
- **Accessibility:** Open access papers are made available **far more quickly** than the printed versions – and are **accessible to all**, regardless of whether they can afford a journal subscription.
- **Preservation:** Repositories will ensure that your research is **available long-term** – even after the books, journals or conference proceedings go out of print.

There are also national and international **teaching repositories** that provide re-usable teaching materials. Most have a subject-based search facility - see JORUM (<http://www.jorum.ac.uk/>) and MERLOT (<http://www.merlot.org/>), for example. Your academic library will keep up-to-date with developments in this area, to enhance your research and teaching.

Many thanks to Elizabeth Gadd, Academic Services Manager (Engineering), Loughborough University Library, for her assistance with this guide.

September 2006