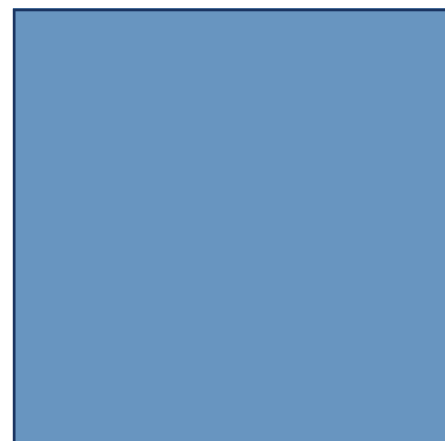
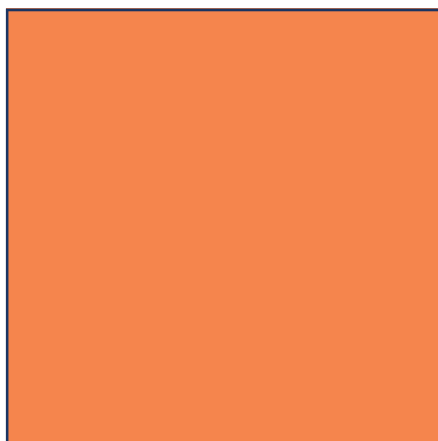
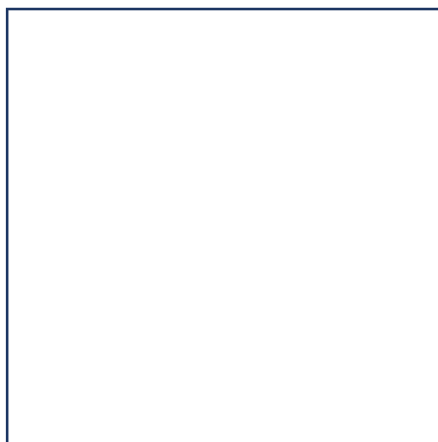
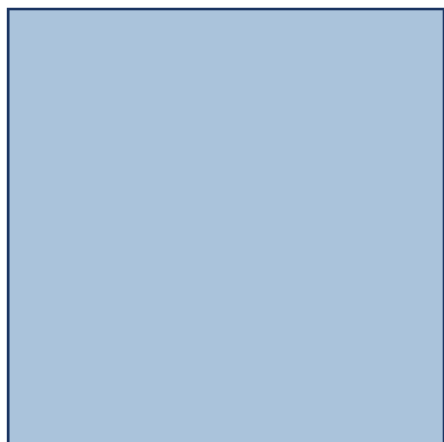
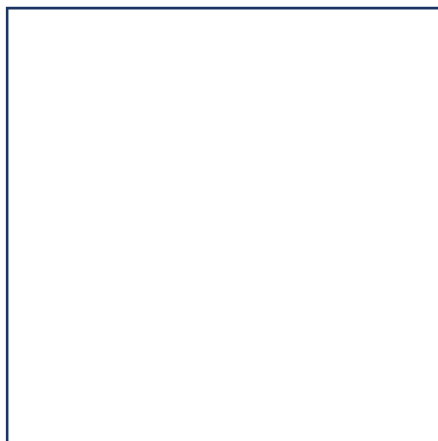


Library and Student Support

Electrical and Electronic Engineering

A short guide to the literature



information, help, support



Electrical and Electronic Engineering: a short guide

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Introduction

The Avril Robarts Learning Resource Centre (LRC), in Tithebarn Street, houses the major collection of materials for your course. However you may also find some useful resources at the Aldham Robarts LRC. This is a short guide to the books, journals and other sources of information you may encounter. Electrical and Electronic Engineering courses embrace a wide range of subjects and materials will be found in many parts of the Avril Robarts LRC. This guide, and the help of the LRC staff, will hopefully enable you to find everything that you need within the LRCs.

If you require further information or assistance the Research & Learner Support Officer responsible for your area is Pauline Smith (2nd floor office, Avril Robarts LRC, ext.4248, email: p.smith@ljmu.ac.uk)

Books

Textbooks tend to be the type of material most commonly used by students. They are arranged according to the Dewey Decimal Classification Scheme, which assigns a class number to each subject area. Broad subjects have short numbers, e.g. 620 is the class number for engineering, whilst more specialised subjects have longer numbers e.g. 620.112 is the class number for properties of materials. Useful class numbers for Electrical and Electronic Engineering students are:

Applied Physics	621	Mechanics	531
Automatic Control		Microelectronics	621.381
Engineering	629.8	Optics	535
Circuits	621.3815	Physics	530
Communication	302.2	Plastics	668.4
Communications		Radar	621.3848
Engineering	621.382	Radio	621.384
Computer-aided		Robotics / robots	629.892
Engineering	670.285	Semiconductor (crystal)	
Computer Engineering	621.39	Devices	621.38152
Computing	004-006	Spectroscopy in physics	535.84
Electrical Engineering	621.3	Systems	003
Electronic Engineering	621.381	Technology management	658.514
Electricity and Electronics	537	Telegraphy	621.383
Electromagnetic theory	530.141	Television – broadcasting	384.55
Engineering	620	Television - social aspects	302.2345
Management	658	Transistors and thyristors	621.381528
Mathematics	510	Video production	778.59

Most books relevant to Electrical and Electronic Engineering are located on the 1st or 2nd floors. There is, however, a danger in only looking at certain numbers when trying to find books on a particular subject. That subject may also be covered elsewhere in the LRC and to overcome this problem you should use the **Library Catalogue**. This will help you to trace materials on any subject; it lists the resources held in all three of the Learning Resource Centres within LJMU. It can be searched in various ways, e.g. Author, Title, Keyword(s) or Subject. The Library Catalogue will tell you where the item is located, how many copies we have, their loan periods and the availability of the item. It can be accessed via dedicated terminals located on each floor of the LRC, or via any networked PC <http://www.ljmu.ac.uk/librarycatalogue> If you experience any difficulty in using the Library Catalogue, please ask the staff for assistance.

Electronic Books

In addition to printed books LJMU members have access to a number of electronic books. All available titles are listed on the **Library Catalogue**. Links to the individual titles plus details of necessary passwords are displayed in the catalogue record. Two subject specific e-book services are **Electronics and Electrical Engineering Books** and **Materials and Mechanical Engineering Books** which give access to a range of engineering titles. If you wish to search these services links are available from the E-book web page <http://www.ljmu.ac.uk/lea/77450.htm>

Short Loan Collection

This is a collection of books held in the **Short Loans Area** on the 1st floor of the LRC. It contains some of the key texts for your course plus the latest editions of some important reference works. Items in this collection can be issued from the self-service point in the **Short Loans Area**. They are issued for a **2- hour loan** only and **cannot** be taken out of the LRC. Details of items in the collection are listed on the **Library Catalogue**.

Photocopy Collection

This is a collection of photocopied journal articles and chapters from books, deposited by lecturers for student use. The collection is housed in filing cabinets in the **Short Loans Area** on the 1st floor of the LRC. Items can be issued for a 2-hour loan from the self-service point in the **Short Loans Area**. Please note they are for use in the **LRC only**. To see what items are available, check the **Library Catalogue**. Photocopies can be located by author, title or the name of the lecturer recommending the item.

Electronic Key Texts (EKT)

Electronic Key Texts (EKTs) is a collection of heavily requested journal articles and book extracts that have been digitised following requests from teaching staff. They can only be printed or saved by students enrolled on specific modules or courses. Each Electronic Key Text has a copyright topsheet, which denotes which group, or groups of students are allowed to do this. These texts can be accessed from any PC on or off-campus, be viewed by multiple users simultaneously and linked to from Blackboard.

Electronic Key Texts are also available as a browseable collection within the Digital Collections, a link is available via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary>

Quick Reference Collection

This collection houses dictionaries, directories, handbooks, yearbooks and encyclopaedias. These items are for use only within the LRC. Quick Reference sections are found on the 1st and 2nd floors of the Avril Robarts LRC. Some examples include:

Dictionaries and Encyclopaedias

LAPLANTE, P.A. Comprehensive dictionary of electrical engineering [621.303 LAP]
WEBSTER, J.G. Wiley encyclopedia of electrical and electronics engineering [621.303 WIL]

Handbooks, manuals

CHRISTIANSEN, D. and FINK, D.G. Electronics engineers' handbook [621.381 FIN]
FINK, D.G. and BEATY, H.W. Standard handbook for electrical engineers [621.3 FIN]
LAUGHTON, M.A. et al. Electrical engineer's reference book [621.3 JON]
NEWNES electrical power engineers handbook [621.3 NEW]

DVDs and Videos

The LRC has a collection of DVDs and videos, which are housed on the 1st floor. Many of these can be borrowed but equipment is also available in the LRC for viewing purposes. Headphones are required for viewing; these can be borrowed from the Hub on the ground floor. Some videos are available via the network video service details are available via <http://www.ljmu.ac.uk/cis/video/index.htm> To find out what videos are available, check the **Library Catalogue**.

Journals (also called Periodicals)

Journals, which are published weekly, monthly, quarterly or even annually, contain the latest developments, research and news in a subject area. At the Avril Roberts LRC, the journals can be found on the **3rd floor**, arranged alphabetically by title. Some of the titles of interest to Electrical and Electronic Engineering students are:

- Applied optics
- Automatica
- Control engineering practice
- Electric power systems research
- Electronics world and wireless world
- European transactions on electrical power engineering
- Everyday practical electronics
- IEEE Spectrum
- International journal of electrical engineering education
- Journal of process control
- Measurement and control
- New Scientist
- Optical engineering
- Proceedings of the IEEE
- Science
- Scientific American
- Transactions of the Institute of measurement and control

For further details consult the **Library Catalogue**.

Electronic Journals

LJMU subscribes to a large number of full-text E-Journals. Details of titles available can be found either in the **Library Catalogue** <http://www.ljmu.ac.uk/librarycatalogue> or from the **E-Journals A-Z** list available via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary>. Once you have located the title you require, click on the blue **FetchIt** button. Details of the years available will be displayed plus a link to access the journal.

Many of the E-Journals we subscribe to are part of larger electronic journal services. It is possible to search all the journals available through a service by subject or by author's name. Some useful services include: IEEE/IET Electronic Library, Science Direct, Emerald Fulltext, Business Source Complete, Academic Search Complete, Institute of Physics Journals and Swetswise. These services can be accessed via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary> and selecting the **Databases A-Z** option.

You can access these services both on and off-campus but before accessing them for the first time make sure you have **set LJMU as your Institution** by selecting this option on the **Electronic Library** web page. This needs to be done once on campus and on each

PC or laptop you use off-campus. Once this is set up you can log into the service using your LJMU username and password if prompted. Please note that IEEE/IET Electronic Library database requires a separate username and password for off-campus access which is available at: <https://www.ljmu.ac.uk/lea/secured/LJMUOnly/79353.htm>

N.B. the number of journals covered by some of the full-text services may be relatively small. If you wish to carry out a thorough search for information you will also need to use some of the indexing and abstracting services mentioned later in the guide.

Locating articles you want to read

If you have the details of a specific article you need to read e.g. from a reading list, try using **FindRef** <http://www.ljmu.ac.uk/lea/findref> . Simply type in the details of the article and select search. Click on the **FetchIt** button to display direct links to whatever print and electronic materials we can offer. If the item is not available there are other options you can check. For example you can search Liverpool University's catalogue via this option. Alternatively you can access their catalogue directly via <http://library.liv.ac.uk> Students from LJMU are allowed reference access to Liverpool University and Liverpool Hope University.

If the item is not available locally it is possible to make a request through the **Inter-Library Loans Service**; a charge is levied for this service.

Newspapers

These can be useful sources of contemporary report and comment on wide ranging subjects and events. Various titles (Guardian, Independent, Financial Times, Times, Observer and Sunday Times) are available in printed and other formats within the LRC.

A very useful source is **Factiva** which is a global news information service providing access to over 1700 newspapers from around the world. A link to this service is available via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary> **Databases A-Z** option.

Searching for Journal Articles

When looking for journal articles on a particular topic, full-text electronic services such as IEEE/IET Electronic Library and Science Direct often provide a good starting point. However in order to carry out a comprehensive search for information you may also need to search some of the larger services covered in the section on Indexing and Abstracting Services.

Indexing and Abstracting Services

Indexing and abstracting services (often known as abstracts and indexes) are used to locate journal articles on particular subjects or by particular authors. They provide a means of keeping track of the thousands of journal papers that appear each year and are updated regularly. Many of these services are available electronically usually referred to as databases.

Library and Student Support subscribe to a number of indexing and abstracting services available via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary> **Databases A-Z** option. Some of the key services for Electrical and Electronic Engineering students are listed below:

COMPENDEX	1969 - present (web-based)
INSPEC	1969 - present (web-based)
Web of Science (WOS)	1970 - present (web-based)

Some of these will require a username and password to access them, particularly from off-campus. Many of the large services require an **AthensDA** username and password, you can set this up by clicking on **Set LJMU as your institution** on the **Electronic Library** web page. Remember, this needs to be done once on campus and on each PC or laptop you use off-campus. Once set up you can then use your normal LJMU username and password to access these resources if prompted. However not all services use this option, links to other required usernames and passwords are available at:

<https://www.ljmu.ac.uk/lea/secured/LJMUOnly/79353.htm>

FindIt and FetchIt

FindIt offers you the facility to find and use electronic resources relevant to your own subject area plus it enables you to search simultaneously many e-resources we currently subscribe to. Please note that not all resources are currently cross-searchable. A link to



is on the **Electronic Library** web page <http://www.ljmu.ac.uk/lea/elibrary>.

FetchIt can help you to link from the abstracts of articles you need, to the full-text where this is available to members of LJMU. A  button appears next to search results in a number of databases, the library catalogue and **FindIt**.

Current awareness services

These services enable you to see what has been published recently in journals thus helping you to keep up to date in your field of interest. Typically they contain reproductions of the table of content pages, which are made available by publishers and also special current awareness services.

ZETOC – The British Library Electronic Table of Contents is available via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary> **Databases A-Z** option. This database contains details of approximately 20,000 current journals and 16,000 conference proceedings published per year.

Some current awareness services including ZETOC offer an alerting option. By registering it is possible to receive updates automatically for the journals of your choice.

Internet/World Wide Web sources of Information

The LJMU website provides information about LJMU and includes links to many external resources. To access the internet from LJMU, double-click on the LJMU web icon. You will find the **Electrical and Electronic Engineering** web page with links to useful sources at <http://www.ljmu.ac.uk/lea/79106.htm>

It is possible to search the whole Internet by choosing one of the search engines available e.g. **Google**: <http://www.google.co.uk> and entering keywords. If you do this try to be as specific as possible, however it is likely that you will retrieve large amounts of non relevant material. To improve your results you may wish to use the **Advanced Search** option, this enables you to limit your search to find more relevant results. It is important to remember

that the availability of information on the Internet is no guarantee of its quality or reliability, no quality control exists for much of the information published. It is therefore important to evaluate any information that you find on a website carefully before referring to it in an essay or acting upon it.

Another useful tool is **Google Scholar**: <http://scholar.google.co.uk> This search tool provided by Google allows you to broadly search the Internet for scholarly literature. Google Scholar also has an **Advanced Search** facility that allows you to build up a more structured search. Although the results found will be more scholarly than a standard Google search it is still no guarantee of academic quality or reliability therefore it is still important to evaluate carefully the references found. If LJMU has access via our electronic resources to any of the results found on a Google Scholar search then on campus there is a direct link to our **FetchIt** facility by clicking **Online via LJMU**. You can set up this link to **FetchIt** off-campus using the **Preferences** option on the front screen of Google Scholar.

Intute is a service that can also help you find reliable sources of information on the web. This is a free online service providing you with access to web resources for education and research, evaluated and selected by a network of subject specialists. The area of this service that would be of interest to Engineering students is:

Intute: Engineering – <http://www.intute.ac.uk/engineering>

Other sources of information

There are various other resources you may need to consult as part of your search for information. Links for the online sources can be located via **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary> **Databases A-Z** option.

Reports

Reports are issued mostly by research establishments (government or private industry) and are usually practical, up-to-date and detailed. The LRC has a selection of reports as well as subscribing to the following web-based services, which index reports:

COMPENDEX
INSPEC

Standards

These are rules that define the quality, size, shape, etc. of products, processes, methods, terminology, etc. These rules provide a basis for standardising many things of use to the engineer. In Britain, one body, the British Standards Institution (BSI), of kite mark fame, is responsible for standards. Electronic access to full-text British Standards is available via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary> **Databases A-Z** option.

Conference (or Symposium) Proceedings

These are the written versions of presentations given at conferences. They may be published separately or as part of a book or journal. Conference proceedings can be useful, acting as reviews of a subject presented from different angles by experts in that field. They can be traced using:

Index of Conference Proceedings [QR 060.16 BRI] print only
COMPENDEX
Conference Proceedings Citation Index – Science

Theses (also called Dissertations)

The LRC has a collection of research degree theses (PhD and MPhil) produced at Liverpool John Moores University. They are held in the **Short Loans Area** on the 1st floor of the LRC. Older theses are held in the **Remote Store** and can be obtained on request.

Theses from other colleges and universities are indexed in *Index to Theses with Abstracts Accepted for Higher Degrees by the University of Great Britain and Ireland*. Available via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary> **Databases A-Z** option.

Increasing numbers of UK doctoral theses are available to download free of charge from the British Library Electronic Theses Online Service (EThOS) at:

<http://ethos.bl.uk/Home.do> If a thesis is not available via EThOS it can be obtained via our **Inter-Library Loan** service.

Simple Guide to Literature Searching

A literature search is a systematic search through the many resources outlined in this guide, in order to locate information on a given subject.

Preparation

1. Define your topic by compiling a list of appropriate key words/phrases and consider any limits you may wish to apply, such as date, language, publication type or geographic location.
2. Remember to use both British and American spellings, acronyms and synonyms where appropriate.
3. If you find too much information you may wish to consider using narrower more specific terms. Alternatively if you find very little information you may wish to consider using broader search terms to widen your search.
4. Combine appropriate terms together using the Boolean Operators **AND**, **OR**, **NOT** to build up your search.

Searching

1. Identify an appropriate database to find useful references (see **Electronic Journals, Indexing and Abstracts** and **Subject Specific Resources** sections of this guide).
2. Access this resource via the **Electronic Library** <http://www.ljmu.ac.uk/lea/elibrary> **Databases A-Z** option.
3. If the full-text is not available via this resource click on **FetchIt** (if it appears in that database). Alternatively use the **FindRef** facility on the **Electronic Library** to search all the other electronic resources at LJMU.
4. If the items are not available at LJMU, remember that you have access to Liverpool University and Liverpool Hope University (for reference purposes).
5. You can apply through the Inter Library Loans service for items that are not held locally. A charge is made for this service. Remember to allow plenty of time for items to arrive.
6. Finally, if you are having difficulties or require advice about any of the resources described in this guide contact your Research and Learner Support Officer. Remember we are here to help.

Pauline Smith - September 2010