

Systems engineering

Collecting policy

User profile

This collection statement covers provision for the School of Systems Engineering, including information technology, computer science, cybernetics, robotics, artificial intelligence and electronic engineering. The collections serve all staff and students in the School.

Research interests

Research interests

Research is structured in four broad areas and specialist laboratories in the School, these are:

Research areas:

- Cybernetics Intelligence Research
- Systems Neuroscience Research
- Computer Science Research
- Information and Communications Technology Research

Research laboratories:

- Intelligent Systems Research Laboratory
- Infrared Multilayer Laboratory
- Brain Embodiment Laboratory
- Energy Research Laboratory

Dimensions of teaching and learning

In 2013-14 there were 360 undergraduates, 8 taught postgraduates, 9 and 56 full time research postgraduates, 31 part time research postgraduates.

Taught courses

The School offers a wide range of degrees across the broad discipline of Systems Engineering:

Artificial Intelligence

Computer Science

Cybernetics

Electronic Engineering

Information Technology

Robotics

All degrees are accredited by the relevant professional bodies, and this was reaffirmed following the accreditation visit in 2013.

These degrees lead to a BSc, a BEng or an MEng qualification. BSc and BEng degrees are basically three year 'bachelor' degrees which meet some of the educational requirements for Chartered status - the remaining requirements can be met by a suitable 'matching' section, such as an MSc degree. Courses are occasionally run with other units, such as Management with Information Technology. Mathematics and Statistics buys some related material.

A full list of undergraduate courses can be found at www.reading.ac.uk/sse

Postgraduate courses include:

- Cybernetics
- Digital Systems Processing and Communications
- Systems Engineering

Current holdings

Most materials fall into the 001-006 and 621.3 sections of the classification (systems, data processing/computer science, computer programming and programmes, artificial intelligence, virtual reality and electronic engineering) but some additional material is found in other sections such as cognition and memory, mathematics, medical sciences, the nervous system and computer control including robotics. For more detail see the Systems Engineering finding your way guide.

The collection has relatively recently undergone an extensive review process to withdraw older and less well used titles. Older books and pre 1990 journals have either been disposed of or relegated to an off-site store to keep the collection current and to create extra space for new materials as part of a Library wide collections project.

Books and e-books

The majority of books relating to Systems Engineering are in the main computer science, programming and data processing section. The other main area of interest is the electronic engineering and control engineering section. There are also items in the supporting sections on mathematics for engineering, cognitive psychology and robotics.

IT Services donate user manuals for some systems in use in the university. Skills texts: titles on "How to write in the sciences" and on other skills are also bought.

E-books are purchased where they support the taught courses in the School (where available.) They will normally be purchased in conjunction with printed copies, especially where multiple copies are being purchased, and are preferred when the title is a key text or required reading for any of the cross-school modules of 150+ students.

Journals and e-journals

The only periodical subscription for Systems Engineering is the IEEE/IET Electronic Library (IEL), which is an online package of 181 journal titles, 1,220 conference proceedings and 2,200 standards.

- IEEE/IET Electronic Library (IEL) - full-text access to Institute of Electrical and Electronics Engineers (IEEE) and the Institution of Electrical Engineers (IEE) journals, transactions and conference proceedings as well as all active, historical and withdrawn IEEE standards.
- The School also has access to many E-journals packages, the most significant of which is ScienceDirect. This full-text database covers journals published by Elsevier in a wide range of scientific areas including: Computer Science; Engineering; Neuroscience; Psychology.

Reference materials – print and electronic (inc bibliographic databases)

There is a small collection of computing dictionaries and some handbooks, dictionaries of terms, and directories in electronic engineering. The majority of the reference material to support SSE is available via the online reference materials: *Credo Reference* and *Oxford Reference Online*. The Library also takes the full text of *British Standards*

There are some general and interdisciplinary bibliographic databases relevant to Systems Engineering.

Key databases are:

- IEEE Xplore (IEEE/IET Electronic Library)
- ScienceDirect
- Science Citation Index (via ISI Web of Knowledge)
- Scopus
- MathSciNet

Strengths, exclusions and areas for development

The book collections mainly reflect the taught course requirements of the School, in particular the Library buys multiple copies of books on reading lists.

The subscription to the IEEE/IEE Electronic Library is a core Library resource for the School. Other electronic databases and e-book collections may be of interest to the school which came out of a recent benchmarking exercise. These include:

- ACM Digital library
- Inspec
- IEEE E-books
- Compendex

Gaining access to subject specific databases, apart from IEEE/IET Electronic library, is not currently considered a priority.

The School does not seek to purchase basic software manuals designed to support students in their general use of IT, such as Microsoft Office manuals. These items are purchased from course support budgets where necessary.

Collecting level

The book collections principally serve the teaching requirements of the undergraduate and taught postgraduate courses. Undergraduates doing dissertations find much of the material they need in the Library but are also supported by inter-library loans for project work.

Research interests are served largely through periodicals, both print and electronic, and inter-library loans.

Alternative access

Inter-library loans

The inter-library loans service is used mainly by research staff and PhD students to obtain items not held in the collection. Inter-library loan requests support the needs of researchers rather than taught students.

Use of other libraries

Members of academic staff and PhD students in computer science regularly use the BCS/IEE Library (British Computer Society/ Institution of Electrical Engineers).

Selection, acquisition and stock editing

See the General Collection Development Statement for general principles.

Responsibility for selecting new material rests with the School, via the Library representative who co-ordinates orders with the Liaison Librarian.

As older materials are rarely added to stock donations of older materials (pre 1990) are not usually accepted, with the exception of some theoretical texts and some conference proceedings.

Policy written by Tim Chapman, Systems Engineering Liaison Librarian, October 2015