

Subject Level Collection Statement: Engineering and Computer Science

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1. Purpose of the Statement

The purpose of this statement is to provide a framework to guide the collection development and management activities for Engineering and Computer Science. The statement supports the teaching, learning and research activities of the Engineering and Computer Science within the Faculty of Engineering and Computer Science.

This statement is developed in accordance with the principles outlined in the [Collection Development and Management Policy](#) (CDMP).

2. Description of the Academic Subject

The School of Engineering and Computer Science was formed as a separate School and Faculty in January 2009, comprising staff from the School of Chemical and Physical Sciences and Computer Sciences from the School of Mathematics, Statistics and Operations Research. The School of Engineering and Computer Science is regarded as a leading research and training-oriented university department in New Zealand. ECS is a member of KAREN, facilitating high-speed network access and connectivity both across New Zealand and to the research networks internationally. The School's research is backed up with its own grid computing initiative and its partnership with the University of Canterbury to run simulations on the Blue Gene Supercomputer.

The teaching and research programmes in Engineering and Computer Science are designed to provide a high quality research based educational and training experience to students at all levels. Courses are designed as professional degrees with focus on the training and development of students as graduates, professionals, researchers, academics and professionally trained engineers and computer scientists.

The School of ECS offers a variety of undergraduate and graduate programmes in Engineering and Computer Science.

Undergraduate programmes offered

The School offers the following undergraduate programmes:

- A four year Bachelor of Engineering (BE) with the following Specialisations
- BE in Network Engineering
- BE in Software Engineering

- BE in Electronic Engineering and Computer System Engineering
- BSc in Computer Science
- BSc in Electronic and Computer Systems
- A conjoint BCA/ BSc programme

Graduate and postgraduate programmes offered

The School offers the following postgraduate programmes:

- ME (Master of Engineering) for graduates with a BE degree
- MSc in Computer Science
- MSc in Electronic and Computer System Engineering
- MCompSc – Master of Computer Science
- MSc in Logic and Computation
- PGDiPSc - a postgraduate diploma in Computer Science or Electronic and Computer System Engineering, or Logic and Computation
- PGCertSc - a postgraduate certificate in Computer Science or Electronic and Computer System Engineering, or Logic and Computation
- GDipSc - graduate diploma in Computer Science, Electronics, Logic and Computation
- BSc or BA Hons in Logic and Computation
- BSc Hons in Computer Science or Electronic and Computer System Engineering
- COP – certificate of proficiency for students wishing to take individual courses
- PhD programmes in Engineering and Computer Science

More information on the programmes and courses offered in Engineering and Computer Science is available on the school's [website](#).

There are currently approximately 1,760 undergraduate students enrolled in Engineering and Computer Science courses, 22 of which are Masters students.

3. Focus of the Subject

The teaching focus lays a strong emphasis on the components of research, project work and real world applications aiming at developing students as skilled and trained professionals.

The key research interest areas and groups are as follows:

- ELVIS- Software Engineering group- supports Software and tool development, Human Computer interaction.
- Artificial Intelligence group has research interests in Machine Learning, Neural Networks, Cognitive Science and Data mining.
- Network Engineering Research Group has research interests in wireless communications, networking and distributed computing.
- Computer Systems Engineering and Electronic Engineering group specialises in mechatronics and robotics. The Mechatronics research group has a large fleet of six mobile robots. The group's research objective is to create fully autonomous robots.
- Communications and Signal Processing research group focuses on the areas of networking, communications, signal processing and information theory.
- Evolutionary Computation Research group has research interests including Genetic programming, Image analysis, Signal processing and Evolutionary art.

The Centre for Logic and Computation has research focus on logic, computation and logical analysis of language. The centre consists of researchers from fields of mathematics, computer science, philosophy and linguistics.

4. Overview of the Current Collection

Books

The Library holds considerable collections in Engineering and Computer Science, with new titles in these areas being actively collected. However, the material in engineering and computer science dates rapidly and many titles may no longer be relevant to the programme. The Library will continue to collect in-depth in the School's teaching, research and study areas and will endeavour to purchase key older material if required.

The majority of the collection is housed at the Kelburn Library, with some periodicals held off-site, and some high demand course material on Three Day Loan and Closed Reserve.

ECS has close association with School of Mathematics Statistics and Operations Research. Mathematics and statistics are essential core subjects for students of Engineering and Computer science. Physics is closely associated with the study of Engineering and Computer science. Staff and students of the School of Chemical and Physical Sciences are also potential users of the Engineering collection. Physics, Mathematics and Statistics are taught as prerequisites to BE and Computer Science and also as core courses in the undergraduate programmes. Staff and students of the School of ECS are the main user groups of the Engineering and Computer Science collection.

Reference Collection

The reference collection is compact and somewhat dated. Resources are available in print and online. Print resources are supported by online reference sources such as Access Science, Oxford Reference Online.

E-Books

E-books are an increasing component of the Library collection. SpringerLink was a significant and popular addition to the collection. It has many titles relevant to Computer Science and Engineering. E-books are the preferred format for reference sources as the nature of the information suits electronic delivery and they are more accessible to a wider user group. Science Direct and Wiley InterScience are additional sources of full text content.

Journals

The journal collection in Computer Science and Engineering is comprehensive, and supports the teaching and research needs of the programme in most cases. While some journal titles are still available in print, the great majority are available electronically (or in print and electronic) via a wide variety of electronic providers.

Electronic Resources

The database collection relevant to Engineering and Computer Science includes the following key resources:

- ACM Digital Library and ACM Guide to Computing Literature
- IEEE Xplore
- Engineering Village 2 with Compendex
- SpringerLink online collection
- INSPEC and INSPEC Archive
- CSA Technology Research Database
- MathSciNet
- ENGnetBASE
- Web of Science
- Safari Books Online
- Scopus
- Science Direct
- Lecture Notes in Computer Science

Interdisciplinary databases such as Web of Science and Scopus have extensive features useful for post-graduate students, researchers and advanced learners in science and technology.

5. Collection Development Guidelines

The primary responsibility for selection lies with the staff in the School of Engineering and Computer Science. Academic liaison representatives of the School receive new publication notifications from which they can make selections for purchase. The staff also make online purchase recommendations and send purchase recommendations to the subject librarian who manages the recommendations.

LC Callmark Range	Subject Area	Current Collection Level	Future Collecting Level
HD 9696	Computer and electronics industries	Basic	Basic
HE 6239	Electronic mail systems	Basic	Basic
HG 1710	Electronic funds transfer	Basic	Basic
LB1028.43-LB1028.7	Computer-assisted instruction	Basic	Basic
QA9-QA10.3	Mathematical logic	Study / Research	Research
QA71-76.9	Computer Science, programming, logic programming, software engineering, computer systems, computer architecture, computer arithmetic	Study / Research	Research
QA74	Computer centres/labs	Basic	Basic
QA75.5-QA76.95	Computer Science Electronic data processing	Study	Research

QA 76.6–QA76.73	Programming (computer science)	Study / Research	Research
QA76.63	Logic programming	Study / Research	Research
QA76.7–QA76.73	Programming languages	Study / Research	Research
QA76.758	Software engineering	Study / Research	Research
QA76.76	Software (compatibility, configuration, documentation, productivity, protection)	Study / Research	Research
QA76.8	Computer systems Micro-processors	Study / Research	Research
QA76.9	Other topics in computing		
QA76.9 A73	Computer architecture	Study	Research
QA76.9 B84	Bulletin boards	Basic	Basic
QA76.9 C62	Computer arithmetic	Basic	Basic
QA76.9 C643	Computer organization	Study	
QA76.9 D32	Databases	Study	Research
QA300-Q390	Artificial Intelligence, cybernetics, information theory	Study / Research	Research
QA402.5	Programming (mathematics)	Study	Research
T55.4–T60.8	Industrial engineering (operations research, systems analysis, management information systems)	Study	Study
T385	Computer graphics (technical)	Study	Study
TA –TI	Applied mechanics, hydraulic engineering, railroad engineering, mechanical engineering	Basic	Basic
TJ	Mechatronics	Study / Research	Research
TK	Electrical engineering, electronics, computer hardware and networking.	Study / Research	Research
TK5101-TK8360	Telecommunications, computer engineering, electronics and computer networks.	Study / Research	Research

5.1 Languages Collected

English is the main language for collection purposes.

5.2 Geographical Areas Collected

No geographical area is excluded. The collection is international in scope.

5.3 Chronological Periods Collected

Not applicable.

5.4 Publication Dates

The focus is on recent and current materials with occasional key older material. In view of the developments in the research and teaching areas of the school, the focus is on recent and current materials building on the existing collection in those areas. Retrospective collection may be required if there is a need to support the study, teaching and research programmes or where major works are required to fill gaps.

5.5 Format Guidelines

Electronic journals with perpetual access rights are the preferred format. Print journals are only required if electronic access is unavailable.

Purchase of e-books will be negotiated with academics on a case by case basis. At present the Springer eBook platform (SpringerLink) is a good model. If available, Springer (or a functional equivalent) would be the preferred e-book option.

The e-book format is best suited to “quick reference material such as reference books, handbooks and manuals. E-books may also be a good choice for textbooks and edited books.

5.6 Budget Guidelines

None at present.

5.7 Classification Guidelines

The Library of Congress classification system is used.

5.8 Preservation Guidelines

Any monographs that are beyond repair should be assessed for re-purchase.

5.9 Digitisation Guidelines

To be developed during 2012.

6. *Relegation Statement*

From 2012 the following criteria will apply:

Journals

Print journals not available electronically (including back issues) will be retained in the Library collection in the following locations:

- Most recent 20 years – Kelburn Library
- Issues older than 20 years – Offsite Storage
- Journals which have ceased publication are included in this category.

Journals no longer required for research or teaching purposes will be cancelled (in consultation with academics). Cancelled print journals will be retained in the Library collection as follows:

- Latest 5 years – main collection (level 1)
- Issues older than 5 years – Offsite Storage
- Print journals (including cancelled subscriptions) will remain in offsite storage until deselection is negotiated with academics.

Books

Books will be retained in the library collection in the following locations:

Kelburn Library:

Books published or added to the collection within the last 15 years.

- Books used (issued) in the last 10 years irrespective of publication date.
- Books relevant to current research or teaching, seminal and historic works, works on the history of psychology and books which fill gaps in the existing collection irrespective of publication date.
- Multiple copies of editions (including superseded editions) used for study or teaching

Offsite Storage:

- Books published or added to the collection more than 15 years ago and not issued in the last 10 years.

7. Deselection Statement

From 2012 the following criteria will apply:

Journals

- Print periodicals available electronically will be deselected except for key titles identified by the subject librarian.
- In all cases academics will review periodicals chosen for deselection.

Books

- Books published or added to the collection more than 20 years ago and not issued in the last 10 years will be reviewed for deselection.
- Duplicates and superseded editions (except for teaching material identified above) can be deselected.
- In all cases academics will review books chosen for deselection.

Note: special care will be made to retain items regardless of usage and date which fall into the following categories:

- items by local authors
- items related to local topics
- items which are not held elsewhere in New Zealand

Other Guidelines/Considerations

Engineering and Computer Science are wide-ranging and rapidly changing disciplines. They draw from subjects of Mathematics, Physics and Chemistry and Architecture and Design. The School of Engineering and Computer Science supports a number of research ventures within the University and has ties with organizations throughout the wider Wellington community and on the national and international levels. The School staff are actively engaged in research in many areas with national and international collaborations. Engineering and Computer Science are primarily journal intensive disciplines. Most journals are now accessed online. The disciplines rely heavily on access to the databases such as Compendex, ACM Digital Library, IEEE, MathSciNet, INSPEC, and the publications of well-known associations in the field of Engineering and Computer Science. The book collection supports the large undergraduate student population. E-books are an increasing component of the collection.

The Library endeavours to provide secure access to key scholarly resources. If a current provider discontinues access to an e-journal the library will seek to reinstate access from an alternative source if it is required.

Some courses require multiple copies of textbooks or recommended readings for teaching purposes. Multiple copies of superseded editions will be retained in the Library collection while their content is still relevant. Location will be negotiated with academics (Closed Reserve, 3-Day Loan, and main collection).

Offsite monographs and journals will be returned to the main collection if requested.

Links to other relevant Subject Level Collection Statements

- Architecture
- [Chemistry](#)
- [Mathematics](#)
- [Statistics and Operations Research](#)
- [Physics](#)