

Subject Level Collection Statement: Physics

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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 Physics. The statement supports the teaching, learning and research of Physics within the School of Chemical and Physical Sciences.

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 Chemical and Physical Sciences (SCPS) is well known for its teaching and research excellence New Zealand and Overseas. The School's research strengths are acknowledged both nationally and internationally through its exceptionally high quality publications and research outputs.

The School has a long history of a high standard of applied teaching and research. Academic staff at SCPS are recognised internationally for their outstanding contribution to research in Chemistry and Physics. The School has been a recipient of many grants and funds, which hold testimony to its strong culture in research and innovation.

The School hosts the MacDiarmid Institute for Advanced Materials and Nanotechnology. The Institute was named after Professor Alan MacDiarmid, a Chemistry graduate of Victoria University. He was the co-winner of the 2000 Nobel Prize in Chemistry for his discovery and pioneering development work on conducting polymers. The institute is New Zealand's first centre of Research Excellence in the Physical Sciences.

The School of Chemical and Physical Sciences offers a range of extensive graduate and undergraduate programmes in the fields of and Physical and Chemical Sciences. The School offers a PhD programme in Physics and Chemistry on a wide range of topics. The School offers professional degrees with focus on the training and development of students as physicists, academics, researchers, scientists and professionally trained graduates and undergraduates.

Undergraduate degrees offered

The School offers a Bachelor of Science [BSc] Degree majors in:

- Physics
- Applied Physics
- Conjoint BSc/BTeach degree
- Conjoint BSc/ BCA degree
- Environmental Science

Graduate and postgraduate programmes offered

The School offers the following postgraduate programmes:

- BSc Honours Degree in Physics
- MSc in Physics
- PGDipSc -PG Diploma in Science- Physics
- GDipSc -Graduate Diploma In Science- Physics, Applied Physics
- PGCert-Postgraduate Certificate in Physics
- PhD programme in Physics

More information on the programmes and courses offered in SCPS is available on the School's [website](#).

3. Focus of the Subject

The teaching focus of the School 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 School has a team of teaching staff whose research interests span the fields of physics, astronomy, nanotechnology, ceramics, materials science and signal processing. The staff of Physical Sciences and Chemical Sciences share extensive interdisciplinary teaching, and research interests with the School of Biological Sciences and School of Earth Sciences, and make a significant contribution towards the Bachelor of Engineering degree offered by the Faculty of Engineering and Computer Science.

The key research interest areas and specialities of the staff include computational nanotechnology, environmental physics and geophysics, nanoparticle and quantum dot research, radiation imaging and detection, raman laboratory, spintronics research, wind turbine research, and soft matter and porous media group. Further interests are:

- NMR technologies, NMR methodologies for molecular dynamics, Nano technology, Nano-plasmonics. nanoelectronics and spintronics
- Mechatronics, Robotics, Digital electronics, Communications, Signal processing , Sensor systems and applications and Computational materials science
- Electronic properties of novel materials, Nanoscale materials
- Surface enhanced Raman Spectroscopy, Glasses, and Glass ceramics
- Environmental physics, Geophysics, Antarctic physics, Astrophysics, Condensed matter physics, Theoretical physics, polymer physics
- Geomagnetism, Paleomagnetism, Electromagnetism
- Quantum theory, Optics, Soft matter, and Experimental condensed matter physics

- Physics education and Science communication
- Magnetic semiconductors
- White dwarf structure and asteroseismology
- Radio astronomy, radio galaxies

See the [Physics Research Index](#) for a detailed list of staff research interests.

Research Centres and Collaborations

The MacDiarmid Institute for Advanced Materials is hosted by the School. The institute is one of New Zealand's centres of research excellence, covering the research areas of chemistry, physics, ceramics and materials science, and nanotechnology.

The School shares research interests with the School of Biological Sciences, and is actively engaged in research in the Centre for Biodiscovery, which is an interdisciplinary research centre. The major strengths are drawn from natural products and synthetic chemistry research in the School of Chemistry and Physics and mechanism of action studies and proteomics in the School of Biological Sciences.

The School has joint research programmes with local and international research centres and universities including Crown Research Institutes and industries. Collaborations are with are Industrial Research Limited, GNS Science and NIWA in the Wellington region, and with the Malaghan Institute of Medical Research situated on the Victoria University campus.

Staff at the School have on-going collaborative research programmes with many overseas universities and research institutes at Oxford and Cambridge Universities and Imperial College London, the Max-Planck Institute in Stuttgart, Germany, and Boston and Stanford Universities in the US.

The School is also associated with industries such as New Zealand Pharmaceuticals, Toshiba and Magritech.

4. Overview of the Current Collection

Books

The Library holds large collections in Physical Sciences with new titles in these areas being actively collected. The Library will continue to collect in-depth in these areas and will purchase key older material if required. The majority of the collection is housed at the Kelburn Library, with some periodicals held offsite, and high demand course material on Three Day Loan and Closed Reserve.

Though Physics is a journal-based discipline books are still required, especially to support the large undergraduate student population. The book collection reflects past and current academic interests.

Reference Collection

The reference collection is compact and somewhat dated. It is well supported by online reference sources such as Access Science, Oxford Reference Online, CRC handbook of Chemistry and Physics.

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 Physics. 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.

Journals

The journal collection in Physics 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 Physics consists of the following key resources:

- Compendex
- CSA Technology Research database
- GeoRef
- INSPEC Archive and INSPEC
- IEEEExplore
- MathScinet
- Web of Knowledge (suite of databases)
- Web of Science
- Scopus
- ScienceDirect
- Wiley InterScience
- Springer Link Online Collection
- SciFinder

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.

Staff and students of the School of SCPS and the associated research centres are the main user groups of the Physical Sciences collection. SCPS has association with the Schools of Engineering and Computer Science, School of Earth Sciences, School of Mathematics and School of Biological Sciences. Staff and students of those schools are also potential users of these collections.

5. Collection Development Guidelines

The primary responsibility for selection lies with the staff in the School of Chemical and Physical Sciences. Academic liaison representatives of the school receive new publication notification format from which they can make selections. The staff also make online purchase recommendations.

LC Callmark Range	Subject Area	Current Collection Level	Future Collecting Level
QB1-QB991	Astronomy	Study	Research
QB1-QB139	General	Study	Study
QB140-QB237	Practical and Spherical astronomy	Study	Study
QB275-QB343	Geodesy	Study	Research
QB349-QB421	Theoretical astronomy and celestial mechanics	Study	Study
QB455-QB456	Astrogeology	Basic	Study
QB460-QB466	Astrophysics	Study / Research	Research
QB468-QB480	Non-optical methods of astronomy	Study	Study
QB495-QB903	Descriptive astronomy	Study	Study
QB500.5-QB785	Solar system	Study	Study
QB799-QB903	Stars	Study	Study
QB980-QB991	Cosmogony, cosmology	Study	Study
QC1-QC199	Physics	Study	Research
QC81-114	Weights and measures	Study	Study
QC120-QC168.85	Descriptive and experimental mechanics	Study	Study
QC170-QC197	Atomic physics. Constitution and properties of matter Including quantum theory, solid state physics	Study / Research	Research
QC220-QC246	Acoustics. Sound	Study / Research	Research
QC251-QC338.5	Heat	Study	Research
QC310.15-QC319	Thermodynamics	Study	Research
QC350-467	Optics. Light. Including spectroscopy	Study / Research	Research
QC 450	Spectroscopy	Study / Research	Research
QC474-QC496.9	Radiation physics (general)	Study	Research

QC501-QC766	Electricity and magnetism	Study / Research	Research
QC611.8	Nano Crystals	Study	Research
QC669-QC675.8	Electromagnetic theory	Study	Study
QC676-QC678.6	Radio waves	Study	Study
QC701-QC715.4	Electric discharge	Study	Study
QC717.6-QC718.8	Plasma physics, ionized gases	Study	Research
QC750-QC766	Magnetism	Study	Research
QC770-QC798	Nuclear/particle physics. Atomic energy. Radioactivity	Study	Research
QC801-QC809	Geophysics. Cosmic physics	Study / Research	Research
QC811-QC849	Geomagnetism	Study / Research	Research
QC851-QC999	Meteorology, climatology, including the earth's atmosphere	Study	Research
QC980-QC999	Climatology, weather Weather forecasting	Study	Research
QE351-QE399.2	Mineralogy	Study	Research
QE420-QE499	Petrology	Study	Research
QE500-QE625	Dynamic and structural geology	Study	Research
QE521-QE545	Volcanoes and earthquakes	Study	Research
QE601-QE613.5	Structural geology	Study	Research
QE640-QE699	Stratigraphic geology	Study	Research
QE701-QE996.5	Palaeontology	Study	Research
T174.7	Nano Technology	Study / Research	Research
T201-342	Patents. Trademarks	Basic	Basic
TA	Engineering (General)	Study	Research
TA401-TA492	Materials science	Study / Research	Research
TK7874.8-TK7874.88	Nanotechnology	Study	Research
TN	Mining engineering / metallurgy	Basic	Basic

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

No chronological period is excluded.

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

Physics is a wide-ranging discipline. It draws from many other subjects such as mathematics, engineering, chemistry and geology. The School of Physical and Chemical Sciences supports a number of research centres 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. Physics is a journal intensive discipline. Most journals are now accessed online. It relies heavily on access to the specialist Physics databases such as INSPEC, IEEE and the publications of well-known associations in the field of Physics. 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

- [Chemistry](#)
- [Engineering and Computer Science](#)
- [Geology](#)
- [Mathematics](#)