1. General Information

1.1 Collection Purpose
The emphasis at the University of Waikato is on the study of physics as a pure, applied, theoretical and experimental science. Papers are organised into theoretical and experimental subject areas.

The physics collection supports the teaching, research and learning needs of staff and students in the School of Engineering (an amalgamation of Physics & Electronic Engineering and Materials & Process Engineering) in the Faculty of Science & Engineering. The collection also supports other disciplines.

Programmes offered in physics range from bridging papers in preparation for the study of science, through undergraduate, graduate and postgraduate certificates and diplomas to masters and PhD level.

1.2 Primary User Groups
The primary users of the collection are students and staff of the Faculty of Science & Engineering.

Physics is available as a major for the Bachelor of Science (BSc) and Bachelor of Science (Technology) (BSc(Tech)) degrees.

Instead of majoring in physics, students may take physics papers as part of a number of specified programmes. These programmes are interdisciplinary and combine related courses from two or more subjects leading to the BSc, BSc(Tech) or Bachelor of Engineering (BE).

1.3 Department’s Research Interests
Research interests within the Department of Physics are listed in the Science and Engineering handbook and on the department’s website.

Some research areas overlap with engineering and technology, namely
- electronics
- electronic instrumentation
- high speed communication
- medical physics
1.4 Interdisciplinary Relationships

Physics is the natural basis of technology disciplines such as electronics, engineering and computer science, and the collection is used extensively within these disciplines. Within the department the primary focus of teaching and research is on electronic engineering, with a niche interest in physics. Subsequently, a large cross-over exists between the two disciplines. The collection also supports relevant courses and research in other subjects offered by the Faculty of Science & Engineering. The faculty’s primary aim is to promote and enhance its multidisciplinary research activities. Courses and research in Computer Science, Engineering, Earth & Ocean Sciences and Mathematics and those offered by the Centre for Science and Technology Education Research (TEMS Education Research Centre) are also supported.

2. Description of Existing Collection

Relevant material is held in the following LC classification areas in the Central Library:

QC1-75 Physics – general, study & teaching, reference, miscellaneous topics
QC81-114 Weights & measures
QC120-168 Descriptive/experimental mechanics
QC170-173 Atomic physics
QC173.96-174.52 Quantum theory
QC174.7-175 Statistical physics
QC176 Solid state physics
QC220-246 Special topics in physics
QC251-338 Heat/thermodynamics
QC350-467 Optics/light
QC474-496 Radiation physics
QC501-667, 679-717.5 Electricity
QC669-675 Electromagnetic theory
QC676-678 Radio waves/microwaves
QC717.6-718 Plasma physics
QC750-766 Magnetism
QC770-792 Nuclear physics
QC793-793.5 Particle physics
QC794.95-798 Radioactivity
QC811-849 Geomagnetism

There is also some overlap with other subject areas in Science & Engineering and Computing & Mathematical Sciences, so that some relevant books will also be held in other parts of the Q-QR call number range. Relevant books which overlap with Engineering (e.g. electronic engineering) may be held in the T call number range.

Increasingly e-books are being purchased.

While the holdings in most areas are adequate for present requirements, the area of biophysics, which has recently become one of the primary areas of physics research, may still be underrepresented in the library. The future focus for collection development should be on applied physics and biophysics.
The Library provides access to scholarly journals, electronically or in print, and databases, including:

- American Chemical Society (ACS) Journals
- Cambridge Journals Online
- EBSCOHOST
- Engineering Village (Compendex and INSPEC)
- IOPscience (Institute of Physics)
- Oxford Journals
- PROLA (Physical Review Online Archive)
- Proquest Science and Technology
- Sage Journals
- ScienceDirect (Elsevier)
- SciFinder
- Scopus
- SpringerLink Journal Collection
- Web of Science
- Wiley Online Library

A notable omission is IEEE Xplore (IEEE journals/conferences), which is relevant to applied physics as well as engineering.

The e-print archive ArXiv (a free Web resource) is noted as a highly important source of information in physics and the related disciplines of mathematics, non-linear sciences, computer science and quantitative biology. A similar archive exists for mathematical physics – mp_arc.

3. Scope of Coverage

Emphasis is on undergraduate and graduate texts, research monographs, professional society publications and journals. Appropriate reference works are collected and updated. Conference proceedings are not purchased unless requested or of local significance. Popular works, biographies and histories are not generally collected.

3.1 Chronological Periods

Although no chronological period is excluded, emphasis is on the study of modern physics.

3.2 Types of Material

Print and/or electronic formats are collected but other types of material may be considered.

3.3 Geographical Areas

No geographical areas are excluded.

3.4 Languages

English is the primary language of the collection.

3.5 Publication Dates

While the collection focuses on recent and current material to support the teaching and research areas of physics, retrospective collecting may be undertaken to support new teaching and research programmes.
3.6 Special Considerations
Collection management activities must bear in mind the close relationship with electronic engineering.

Material with an older imprint may be retained to provide an overview of the development of theories.

4. University of Waikato at Tauranga
Physics is not offered at the Tauranga campus.