Collection Subject Statement: Physics & Astronomy

Last reviewed: May 2025

Purpose
The Physics & Astronomy collection in the University of Pittsburgh Library System (ULS) supports the academic programs and research needs of the students, faculty, and staff across the university. The collection supports B.S. degrees in physics, physics & astronomy, and physics & quantum computing, a B.A. in astronomy, a certificate in nanoscience & engineering, and M.S. and Ph.D. degrees at the Pittsburgh campus. It also provides resources for courses that support the B.S. in Radiological Science, Forensic Science (Bradford), Natural Science with concentration in Physics (Johnstown), and bachelor's degrees in a variety of natural sciences, engineering, pre-health, and nursing majors across the campuses. Research from the undergraduate to post-doctoral and faculty levels is supported at each campus as appropriate. The collection aims to support all aspects of teaching and learning in physics & astronomy at the university, including theory and practice, and to enable and encourage independent inquiry and research. Relevant materials are located primarily in Bevier Library, Hanley Library, Millstein Library, Owen Library, and the Thomas Blvd. Library.

Audience
The collection primarily serves the needs of students, faculty, and researchers in the fields of physics and astronomy across the university. This includes students taking physics or astronomy courses as requirements for or in support of majors in other departments, as part of pre-health science programs, for secondary education degrees with certification to teach physics, and for general education requirements. The collection is also a resource for those in disciplines such as biological sciences, chemistry, computational sciences, engineering, geology, environmental science, materials science, neuroscience, and certain health sciences.

Guiding Principles and Areas of Focus
The collection is intended to represent the broad range of study and research in physics and astronomy. Physics includes biophysics, computational methods, electricity & magnetism, heat & thermodynamics, measurements, mechanics, nanoscale physics, nuclear & particle physics, optics, quantum physics and computation, relativity, semiconductors, solid state physics, spectroscopy, superconductors, surface science, and waves. Astronomy includes cosmology, dark matter, galaxies, extragalactic objects, properties and evolution of the universe, quasars, the solar system, stars, supernovae, and techniques (theoretical, computational, observational). Subject matter is guided by current teaching and research. The focus is on original writing and research in all formats, but on occasion reprints of classic works or collected works of major contributors to the field are acquired.

Collection Scope

The Physics & Astronomy collection offers a wide range of print and digital materials in the form of monographs, journals, selected book series and conference proceedings, compilations of data, and electronic databases related to physics and astronomy. Resources covering laboratory methodology, experimental techniques, and instrumentation are acquired, but "one-time use" laboratory manuals, workbooks, and most spiral bound material are not. Advanced and graduate level textbooks may be acquired, but most undergraduate and introductory textbooks will only be acquired on request in support of course reserves. Selected materials in physics education, science fiction, criminalistics, and science & society may be acquired in support of research and for specific courses. Works of history and philosophy are generally reserved for History and Philosophy of Science but may be acquired selectively. A limited number of more general or biographical treatments may be acquired to support general interest reading. English is the primary language of the collection, although considerable historical material is available in German, French, Russian, and other languages. Materials are acquired primarily from publishers based in North America and Europe, but individual works and journals reflect a broad international scope of authors and contributors. The emphasis is on adding current publications.

Library of Congress Classification

Typical classifications in which materials are acquired are listed below. Selective acquisitions may also be made in other categories based on need and interest. Works on planets, asteroids, and meteorites are generally reserved for geology.

M (Music)

- ML 3805 Music acoustics
  (as related to physics courses and in conjunction with what is acquired for music)

PN (Literature (General))

- PN3433 Science Fiction
  (selectively to support specific courses; also other P ranges when books are classified by specific authors)

Q (Science (General))

- Q181-183.4 Study and teaching *(selectively and as related to physics and astronomy)*

QA (Mathematics) *Materials in QA are acquired in support of specific courses or research or when they have specific applications to physics or astronomy. Acquisitions are made in conjunction with those for mathematics, statistics, computing, engineering, and other sciences*.

QB (Astronomy)

- QB3- 6 Observations and Star Catalogs *(collected selectively)*
- QB81-83 Observatories *(depending on the observatory)*
- QB84.5-117 Astronomical instruments
- QB140-237 Practical and spherical astronomy
- QB349-421 Theoretical astronomy and celestial mechanics
- QB450 Comochemistry
- QB460-466 Astrophysics (General)
- QB468-480 Non-optical methods of astronomy
- QB495-500.3 Universe. Space. Space sciences/Northern sky/Southern sky
- QB500.5-595 Solar system
- QB790-792 Interstellar matter
- QB799-855 Stars/Clusters and nebulae
- QB856-858 Galaxies
- QB860 Quasars
- QB870-903 Stellar spectroscopy
- QB980-991 Cosmogony. Cosmology

QC (Physics)

- QC19.2-20.85 Mathematical physics
- QC52 Data processing
- QC120-168.8 Descriptive and experimental mechanics, including fluid mechanics
- QC170-173.458 Atomic physics. Constitution and properties of matter
- QC173.5-173.75 Relativity physics/Field theories. Unified field theories
- QC173.96-174.52 Quantum theory. Quantum mechanics.
- QC174.7-175.36 Statistical physics. Including statistical mechanics and dynamics
- QC175.4.A1-175.47 Superfluid physics
- QC176-176.95 Solids. Solid state physics
- QC177-179 Theories of ether/Theories of gravitation/Gravitational waves
- QC 182-197 Special properties of matter and antimatter
- QC221-247 Acoustics. Sound
- QC251-338 Heat *(including thermodynamics and heat transfer)*
- QC350-446 Optics. Light *(including optical measurements, instruments, apparatus, geometric optics, photometry & microphotometry, physical optics)*
- QC446.15-449 Nonlinear optics. Quantum optics/Fiber optics/Holography
- QC450-467 Spectroscopy
- QC474-496 Radiation physics
- QC501-718 Electricity *(including semiconductors, superconductivity, electrodynamics, quantum electrodynamics, plasma physics)*

- QC750-766 Magnetism
- QC770-798 Nuclear and particle physics
- QC801-809 Geophysics. Cosmic physics.

QH

- QH505 Biophysics *(in conjunction with what is acquired for biological sciences and bioengineering)*

Connections & Collaborations

The ULS collaborates with other institutions and consortia to acquire specialized materials that support research, teaching, and learning in the disciplines of physics and astronomy, particularly in areas where shared resources improve accessibility to rare or costly materials. Regionally and nationally, the ULS participates in several consortia for collection development (*NERL, EAST, Hathi Trust, CRL*) and resource sharing (PALCI EZBorrow, OCLC Interlibrary Loan, RapidILL) that shape strategy for the Physics & Astronomy collection. Within the university, the ULS cooperates with the Health Sciences Library System to provide shared access to a variety of electronic books, journals, databases, videos, and specialized resources. Development of the collection takes into account the connection of Physics & Astronomy with related disciplines, such as biology, chemistry, computational science, engineering, geology, materials science, mathematics, neuroscience, health sciences, and statistics.

Subject Experts

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- Johnstown campus contact: Jim Langan (jlangan@pitt.edu)
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Sources of Information

https://www.upb.pitt.edu/academics/majors-minors
https://www.greensburg.pitt.edu/academics
https://www.titusville.pitt.edu/academics
https://www.johnstown.pitt.edu/academics/majors-programs
https://www.physicsandastronomy.pitt.edu/