Information Services Collection Policy: School of Physics and Astronomy

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1. Introduction

Information Services holds and provides access to information resources to support the research, learning, teaching and business activities of the University. For the same purposes, but also in support of the actual and potential interests of the local, regional, national and international research community, the library holds and provides access to Manuscript and Special Collections.

2. Overview

2.1. Collections

Information Services aims to provide information resources to fit the priorities of the School of Physics and Astronomy, within practical and budgetary constraints. Information Services will attempt to acquire sufficient material for undergraduate and taught postgraduate courses. It also aims to hold key materials which support the research activities of the School.

Library collections include, but are not limited to, the following types of information resources:

- printed material, including books, pamphlets, journals, newspapers, music, maps etc
- eBooks and eJournals
- electronic databases
- photocopies and electronic copies
- photographs
- multimedia materials
- microforms
- manuscripts
- sound, video and film recordings

Information resources are provided under the following arrangements:

- owned by the University and managed by Information Services
- licenses or other permission from the rights holder
- partnerships and other collaborative arrangements

- public domain resources

2.2. Global library collections

Information Services is managing a global collection.

Many items required by users will not be available in the library collections of the University of Nottingham. Efforts will be made to obtain access to such items through Inter-Library Loan or other document delivery services. The cost of such requests, up to a certain quota, will be subsidised by Information Services, though a nominal fee will be charged. The fee for requests in excess of the quota, however, will approximate the full cost, excluding staffing and administrative costs.

3. Mechanisms for implementation of the policy

3.1. Scope of the current policy

The policy is to acquire materials on all aspects of physics and astronomy studies relevant to the learning, teaching and research carried out in the department. In addition materials will be acquired which build on the strengths within the physics and astronomy collections in order to maintain their local and regional importance and to provide a broad, balanced collection for further research and project work.

The policy is to be monitored by the Science & Engineering Faculty Team and the Library Liaison Representative. Each year the policy will be reviewed and, if necessary, revised by a member of the Science & Engineering Faculty Team and the Library Liaison Representative for the School of Physics and Astronomy.

3.2. Provision

Material will be purchased to support the current teaching and research interests within the school.

3.2.1 Teaching and Learning

Particular subject areas relevant to teaching and learning include the following:

General Physics

Mathematics for Physicists

Electromagnetism: classical electromagnetism, vector calculus, dielectric and magnetic properties of matter

Quantum Mechanics: wave mechanics, open quantum systems, quantum dynamics, quantum information, quantum field theory

Thermodynamics & Statistical Mechanics: classical thermodynamics, statistical mechanics, statistical field theory, thermal physics, non-equilibrium statistical mechanics, kinetic theory, transport theory

Classical Mechanics: Newtonian mechanics, analytical mechanics, nonlinear dynamics, chaos, solutions, fluid mechanics

Optics: geometrical optics, physical optics, Fourier optics, laser physics, cavity QED, quantum optics, atom optics

Condensed Matter Physics: solid state physics, soft condensed matter, polymer physics, liquid crystals, neutron scattering, magnetism and magnetic materials, phase transitions and critical phenomena, semiconductor physics and devices, metals, quantum fluids, ultra-cold atoms, Bose Einstein condensation, superconductivity, mesoscopic physics, quantum transport, optical properties of solids, quantum Hall effect

Atomic Physics: atomic structure, cold atoms, laser cooling and trapping, atomic scattering

Nuclear and Particle Physics: Nuclear structure, radiation physics, nuclear power, particle accelerators and detectors, standard model, grand unified theories, supersymmetry, string theory, M-theory

Biophysics: nerve action, cell structure and function

Nuclear Magnetic Resonance: solid state NMR, MRI, ESR, EPR, DNP

Nanoscience: self-organization and self assembly, scanning probe microscopy, surface science, molecular biophysics, nanotechnology

Medical Physics: MRI, PET, ultrasound scanning, radiology and radiography, radiation protection, radio-tracers and pharmaceuticals

Atmospheric Physics: meteorology, planetary science

Theoretical and Mathematical Physics: Differential geometry, group theory, complex analysis, perturbation methods, mathematical modelling, differential equations

Astrophysics: stellar structure, galactic structure, high energy astrophysics, black holes, neutron stars, dark matter, dark energy,

supernovae, observational astronomy, radio astronomy, gamma ray astronomy

Computational Physics: Monte Carlo methods, molecular dynamics

Experimental Physics: Error analysis, experimental design

Relativity and Cosmology: special relativity, general relativity, cosmology

Communication Skills: scientific writing, scientific presentations, teaching physics, research skills, presentational and self directed skills

3.2.2. Research

Particular subject areas relevant to teaching and learning include the following:

Astronomy
- The morphologies and dynamics of galaxies
- The formation and evolution of galaxies
- The large-scale structure of the Universe

Condensed matter theory
- Quantum phenomena in nanostructures
- Ultra cold atoms and other quantum fluids
- Statistical Physics and it's applications

Experimental Condensed matter theory & Nanoscience
- Nanoscience
- Semiconductors
- Acoustic and Ultrasonics
- Ultra-fast optics
- Granular dynamics
- Magnetic Levitation
- Nanoelectromechanical Syatems
- Nuclear Magnetic Resonance
- Ultra-low temperature physics

Magnetic Resonance Imaging and Spectroscopy
- Developments of MRI including radio frequency pulses and magnetic field gradients
- Applications of MRI to the study of brain function, gastrointestinal physiology and pregnancy
- Non Biological Applications of MRI such as microscopy and pharmaceutical dosage

Particle Theory

- Particle Cosmology :inflation, dark matter, dark energy, phase transitions, primordial black holes, cosmic strings.
- String Cosmology: braneworlds, quantum gravity cosmology, cosmic superstrings.
- General relativity and string theory: higher dimensional black holes, singularities

Ultra cold atoms

- Low dimensional quantum gases
- Quantum Memory
- Mixtures
- Theory

Where there is overlapping interest or joint research projects with other departments, schools and faculties, the Science & Engineering Faculty Team will collaborate with colleagues to ensure provision of relevant material.

3.3. Funds for acquisition

Funds which may be used for purchase of materials for the School of Physics and Astronomy are:

- the School of Physics & Astronomy book fund
- the Science Area fund
- bids for a share of funding to support new modules/new lecturers

The level of funding will be communicated to the department each year as early as possible via the School Library Liaison Representative. The representative will be regularly informed of the status of the fund. Updates can be obtained at other times as required from the Science & Engineering Faculty Team.

Periodicals are purchased through a separate Faculty-based periodical fund.

3.4. Selection and recommendation mechanisms

The following tools may be used for selection of resources:

- information received from module convenors and contributing lecturers
- communications and suggestions from the School, through the book suggestions web page
- publishers' and booksellers' catalogues (print or online); Dawson's EnterBooks, British National Bibliography
- current awareness listings e.g. Coutts Library Services profile reports

The Science & Engineering Faculty Team is also alerted to heavily reserved items or items reported missing or damaged. The Science & Engineering Faculty Team is responsible for ordering extra copies or replacing these items.

Information Services also relies on academic staff for book suggestions. The books suggestions form is available online: www.nottingham.ac.uk/is/uon/forms/book-suggestions.php

3.5. Ordering and receipt mechanisms

Items are ordered by the Science & Engineering Faculty Team or centrally by the Acquisitions department and are recorded on the Library Management System. Urgent orders are normally sent within five working days; all orders are sent in accordance with Key Performance Indicators.

Items currently on order are displayed on the Library Online Catalogue. Reservations may be placed on items at any stage. Further information regarding items on order can be obtained from the Science & Engineering Faculty Team.

The Science & Engineering Faculty Team can be contacted for further information on progress.

3.6. Donations

The collections have, over the years, been enhanced by donations. Donations will normally be added to stock only if relevant to the current teaching or research profile or if they strengthen existing specialist areas. Substantial donations must be notified to, and agreed with, the Science & Engineering Faculty Team before delivery.

There is a separate Donations Policy.

3.7. Classification and storage

Items acquired will be stored in the most appropriate library and classified in the appropriate subject area. Items may occasionally be duplicated between libraries.

Items are classified according to the Library of Congress classification scheme. A copy of this scheme can be consulted online from the Library of Congress web site: www.loc.gov.

Periodicals are arranged in alphabetical order on the top floor (D floor) of the George Green Library

Extra copies of books which are in heavy demand are bought where they are available. These may be stored on the main shelves as ordinary loan or in the Short Loan Collection.

The classification scheme used in the Short Loan Collection is the same as on the main shelves.

Material which is fragile or less-heavily used may be placed in the George Green store or at the King's Meadow Campus. The library catalogue may be used to request items at the King's Meadow Campus, which will normally be made available within two working days. Items in the local library stores are available for consultation and in some cases may be borrowed. This material can be consulted (and, in most cases, borrowed) during staffed library opening hours on request at the main lending desk.

3.8. Subject resources

Important printed and electronic resources of interest to the School of Physics and Astronomy are available through the eLibrary Gateway. These resources include bibliographic databases, internet subject gateways, full text resources and electronic journals.

The following resources are of particular relevance to the School of Physics and Astronomy.

- CRC Handbook of Chemistry & Physics
- Derwent Innovations Index (WoK)
- DOE/OSTI E print Network
- Ebrary
- Ei Compendex
- Encyclopedia of Astronomy and Astrophysics
- Essential Science Indicators
- INSPEC (Ovid)
- Intute: Science, Engineering & Technology
- Knovel electronic books collection
- Landolt-Bornstein
- MathsSciNet
- NASA ADS
- Oxford Reference Online
- Scopus (Elsevier)
- Solid State Abstracts (CSA)
- Web of Science (WoK)

3.9. Journals

Journal price inflation is consistently higher than average inflation. This means Information Services is unable to invest in new print journal titles at present without a balancing cancellation.

The school has an interest in the following e-journal packages:

- American Chemical Society
- American Mathematical Society
- American Institute of Physics
- American Physical Society
- Blackwells
- BMJ Publishing Group

- Cambridge Journals Online eJournal
- Highwire Press Database
- IEE
- IEEE Xplore
- Institute of Physics
- JSTOR Database
- Journals @ OVID
- Kluwer Online Journals Database
- Nottingham ePrints
- Nature
- Oxford University Press Database
- Science Direct
- Springer Database
- Swetswise
- Wiley

These and other individual electronic journals may be accessed via the eLibrary Gateway or the Library Online Catalogue (UNLOC).

3.10. Conference proceedings

Where conference proceedings contribute substantial information to the subject they may be acquired.

3.11. Standing orders

Information Services recognises the importance of continuing commitment to major monographs in series and attempts to maintain these where appropriate. Those currently charged to the School of Physics and Astronomy book fund are:

- Einstein – collected papers of Albert Einstein
- Encyclopaedia of astronomy and astrophysics
- Experimental methods in the physical science
- Solid state physics

These titles will be reviewed to match changing teaching and research profiles

3.12. Theses and eDissertations

Printed copies of PhD theses are kept in the George Green Store on the basement level of the library. Theses and dissertations may also be submitted to the library electronically. For more information see: http://etheses.nottingham.ac.uk.

3.13. Balance between printed and electronic resources

Information Services seeks to provide access to new electronic resources where appropriate, whilst taking care to monitor the balance between printed and electronic resources.

3.14. Reading lists

In order to ensure copies of recommended texts can be obtained in time for relevant modules, readings lists should be submitted by academic staff to the library 10 weeks before the start of the Semester. Module convenors should indicate on reading lists which books should be in short loan.

Reading lists should include details of author, title, edition (where applicable), year of publication, publisher and ideally place of publication and ISBN. A note of the expected number of students on the module should also be included.

Module convenors should inform the Science & Engineering Faculty Team when modules cease so that the online reading list can be deleted.

Module convenors are encouraged to make reading lists available online at: www.nottingham.ac.uk/is/gateway/readinglists.

3.15. Short Loan Collections

3.15.1. Books

The number of copies of a book ordered for the main shelves or Short Loan Collection will depend on factors such as:

- the number of students (and whether full- or part-time) on the module(s) for which it is recommended
- the length of reading list and/or prioritisation of the items on the list
- experience of usage of books recommended for modules within the department or specialism
- likely longevity of the module
- cost
- frequency of new editions and relevance of previous editions
- existence of online full-text versions
- overlap with other modules

Use of books is monitored and extra copies are purchased as necessary.

3.15.2. Photocopies

Photocopies of journal articles may also be held in the Short Loan Collection provided they are within permitted limits. Photocopies from originals within the library's own collection can be placed in the Short Loan Collection, provided the publisher participates in the Copyright Licensing Agency agreement. Any other material has to be obtained via the British Library copyright fee-paid service using the Inter-library Loan service.

3.15.3. Digitised copies

Documents covered by the terms of the Higher Education Scanning Licence, or for which separate permission has been obtained from

copyright holders, may be acquired and made available in digitised form for students to access via the online reading lists.

3.16. Binding

Binding of material in the collections is supported from the binding fund. Titles selected for binding will be reviewed from time to time to ensure the preservation of heavily-used periodicals.

3.17. Expensive and interdisciplinary items

Expensive items, reference works, and items of an interdisciplinary nature can be recommended by academic staff and may be funded in full or in part by the Science Area book fund. The Faculty Team will liaise with colleagues in other subject areas where there is an overlap of interest.

3.18. Collection management

The collection is regularly monitored and the Relegation Policy is available online: www.nottingham.ac.uk/is/about/policies/documents/library-collections-relegation-policy.pdf

3.19. Collection development

The collection will be developed to support teaching and research activity in the School of Physics and Astronomy. Where it is appropriate, the collection will complement local and regional collections. The Science & Engineering Faculty Team will consider active participation with national collection management initiatives.

3.20. Information Literacy

Use of the collection will be supported through information literacy sessions provided by the Science & Engineering Faculty Team, including induction, longer sessions arranged through the Graduate School and tailored sessions for the School of Physics and Astronomy.

Pathway2Information will give staff and students general information skills guidance and support. These pages are available online: www.nottingham.ac.uk/pathways

3.21. Department of Manuscripts and Special Collections

This policy does not cover, in any detail, the work of the Department of Manuscripts and Special Collections within Information Services, whose holdings complement and extend core library collections. For advice on the department's collection policies, see www.nottingham.ac.uk/ManuscriptsandSpecialCollections/Collections/Introduction.aspx.