

# Information Services Collection Policy: Department of Electrical and Electronic Engineering

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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 Department of Electrical and Electronic Engineering, 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 Department.

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.

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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

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 electrical and electronic engineering 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 electrical and electronic engineering 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 for the Department of Electrical and Electronic Engineering. 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.

### 3.2. Provision

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

#### 3.2.1 Teaching and Learning

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

- Biophotonics and imaging
- Business planning and finance
- Circuits and fields
- Coding and cryptography
- Communications and networks
- Computational engineering
- Computer engineering
- Computer hardware
- Control system design and architecture
- Digital communications
- Digital signal processing
- Electrical machines
- Electronic design

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- Electromagnetism
- Embedded computing
- Energy and the environment
- Engineering mathematics
- Entrepreneurship
- Field waves and antennas
- Hardware description languages
- Industrial awareness
- Instrumentation and measurement
- IT infrastructure
- Marketing
- Microwave engineering
- Mobile communications
- Motor and generator drives
- New venture creation
- Nonlinear waves
- Numerical methods
- Optical communications and networks
- Photonics and radio frequency
- Power electronics and networks
- Power systems for aerospace, marine and automotive applications
- Real-time systems
- Renewable generation technologies and control
- RF microelectronics
- Science, technology and business
- Signal processing and control engineering
- Software engineering
- Solid state devices
- Technologies for the hydrogen economy
- Technologies for wind generation
- Telecommunications
- Ultrasonics
- VSLI design
- Web based computing

## 3.2.2. Research

Research areas may fall within the seven research divisions within the Faculty. See Appendix A for research areas.

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 Department of Electrical and Electronic Engineering include:

- the Department of Electrical and Electronic Engineering book fund
- the Engineering 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 Departmental 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 separate Faculty-based periodical funds.

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## 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
- publishers' and booksellers' catalogues (print or online); 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](http://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.

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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](http://www.loc.gov).

Periodicals are arranged in alphabetical order by title in 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 local library stores 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 Department of Electrical and Electronic Engineering 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 Department of Electrical and Electronic Engineering

- British Standards Online
- Proquest Databases, including:
  - Abstracts in New Technologies and Engineering (ANTE)
  - Electronics and Communications Abstracts
  - Solid State Abstracts
- eBrary ebooks
- Ei Compendex
- Knovel eBook and Reference Library
- Morgan and Claypool Synthesis eBook Collection
- Science Direct
- Scopus
- Web of Science

## 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 Department has an interest in the following e-journal packages:

- ABI Proquest Global
- American Mathematical Society
- American Institute of Physics
- Business Source Premier (EBSCO)

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- Cambridge Journals Online
- Highwire Press
- IEEE/IET Electronic Library
- Ingenta Connect
- IOP journals
- Kluwer
- Oxford University Press
- Science Direct
- Springer
- SwetsWise
- Wiley Interscience

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.

## 3.12. Theses and eDissertations

Printed copies of PhD theses are kept in Central Store. 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 and 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](http://www.nottingham.ac.uk/is/gateway/readinglists).

## 3.15. Short Loan Collections

### 3.15.1. Books

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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. Digitized 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 digitized 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 Engineering Area book funds. 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: <http://www.nottingham.ac.uk/is/about/policies/librarycollectionpolicies.aspx>

## 3.19. Collection development

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The collection will be developed to support teaching and research activity in the Department of Electrical and Electronic Engineering. Where it is appropriate, the collection will complement local and regional collections. The Science and 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 Department of Electrical and Electronic Engineering.

The Studying Effectively pages at:

<http://www.nottingham.ac.uk/teaching/studyingeffectively> will give staff and students general information skills guidance and support.

## 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

<http://www.nottingham.ac.uk/ManuscriptsandSpecialCollections/AboutUs/Policy/Collecting.aspx>

## **Appendix A: Research Divisions and Research Interests**

Research in the Faculty of Engineering is split within 7 multidisciplinary divisions

### **Architecture and Urbanism Division**

Specialist areas of research within the Architecture and Urbanism Division include the following:

#### **Architectural Humanities Research Group**

- Architectural theory and criticism
- Architectural history and culture
- Architectural design
- Philosophy of technology
- Museums and architectural exhibitions

#### **Architecture and Tectonics Research Group**

- Zero-carbon architecture
- Digital fabrication and architecture
- New tectonic opportunities
- Materials
- High-rise architecture

#### **Environmental Design in Architecture Research Group**

- Environmental performance of buildings
- Renewable energy and reducing carbon emissions
- Impact of climate change on buildings
- Sustainable environmental design
- Sustainable materials
- Environmental design education
- Acoustics and auralisation of buildings

#### **Urban Design Research Group**

- Urban regeneration
- Conservation
- Waterfront regeneration
- Cultural tourism
- Disaster recovery
- Public consultation

### **Electrical Systems and Optics Division**

Specialist areas of research within the Electrical Systems and Optics Division include the following:

#### **Applied Optics Group**

Optical, ultrasonic and instrumentation engineering, including:

- Biomedical applications
- Integrated sensors
- Laser ultrasonics

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- Microscopy and optical techniques

## **George Green Institute for Electromagnetics Research**

Predictive techniques for electromagnetic design, including:

- Electromagnetic design of systems especially at high frequencies
- Numerical modelling and simulation using computational platforms
- Design systems operating at microwave or optical frequencies

## **Institute of Biophysics, Imaging and Optical Science**

Novel imaging technologies to investigate biological problems from the molecular level upwards. Research covers cellular biology and optical imaging technology, including:

- Advanced imaging techniques
- Cell biology and biophysics
- Custom CMOS camera development
- Neurophotonics

## **Photonic and Radio Frequency Engineering Group**

Research in photonics and microwaves, specialising in communications, high-speed electronics and high-power lasers, including:

- High-power optoelectronics
- Photonic communications technology
- RF devices, circuits and materials

## **Power Electronics, Machines and Control Group**

- Power electronic energy conversion, conditioning and control
- Power electronics integrations, packaging and thermal management
- Motor drives and motor control
- Electrical machines

Research is applied to areas such as aerospace electrical systems and equipment, renewable and sustainable energy, marine systems, industrial drive systems and pulsed power converters.

## **Energy and Sustainability Division**

Specialist areas of research within the Energy and Sustainability Division include the following:

### **Advanced Materials Research Group**

Novel materials for energy technologies, including:

- Hydrogen storage materials
- Nano-tubes for PV applications
- Nano-structured membranes
- Catalysts for fuel cells

### **Cleaner Fossil Energy and CO2 Mitigation**

- Bioenergy
- Fossil energy
- Energy storage
- Built environment and grids

## **Institute of Building Technology (IBT) and Institute of Sustainable Energy Technology (ISET)**

Building services and energy conservation, including:

- CHP systems
- Heat pumps
- Lighting, acoustics
- Ventilation and indoor air quality

Renewable/sustainable technologies in the built environment, including:

- Passive cooling
- Heat recovery
- Solar/wind/ground energy systems
- Absorption technology
- Ejector refrigeration
- Heat pump systems
- Ventilation systems
- Indoor air quality and thermal comfort

## **The Centre for Innovation in Carbon Capture and Storage**

Reduction of CO<sub>2</sub> atmospheric levels and mitigation of global warming, including:

- Carbon capture
- Transport
- Storage and utilisation

## **Thermofluids**

Performance of machines including:

- Reciprocating internal combustion engines, turbomachinery and motors
- Techniques of flow visualisation, flow control and drag reduction
- CFD models, applications and mathematical techniques

## **Infrastructure and Geomatics Division**

Specialist areas of research within the Infrastructure and Geomatics Division include the following:

### **Centre for Geospatial Science**

- Geoinformatics and data modelling
- Geospatial intelligence
- Interoperability and standards
- Location based services
- Semantics, reasoning and cognition

### **Institute of Engineering Surveying and Space Geodesy**

- Geospatial engineering
- Satellite navigation and positioning systems
- Photogrammetry and remote sensing
- Sensor integration
- Geographical information systems
- Ubiquitous positioning and autonomous systems

### **Nottingham Transportation Engineering Centre**

- Paving materials

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- Transport and highway asset management
- Rail track
- Sustainable construction
- Material and infrastructure modelling
- Physiochemical interactions

## **Coastal Dynamics and Engineering**

- Morphodynamics, including sediment sorting
- Nearshore wave propagation
- Wave-generated currents
- Coastal structure design, including hydraulic performance of structures
- Shoreface nourishment
- Numerical models for coastal engineering applications

## **Manufacturing Division**

Specialist areas of research within the Manufacturing Division include the following:

### **Advanced Manufacturing Technology (AMT)**

- Intelligent automation and assembly
- Laser processing
- Machining and condition monitoring
- Metalforming
- Micro- and nano-manufacturing
- Precision manufacturing
- Responsive manufacturing
- Robotics

### **Human Factors Research Group**

Research on behaviours at work, home, travel and leisure to drive user-centred design for the products and systems that are used every day, including:

- Humancomputer interface
- Safe use of objects by children
- Rail and road safety
- Electronics assembly

### **Nottingham Innovative Manufacturing Research Centre**

Research in advanced manufacturing technology, systems and management, including:

- Lightweight structures manufacturing
- Sustainable manufacturing

### **University Technology Centre in Manufacturing Technology**

- Abrasive flow machining
- Conventional machining optimisation
- Process monitoring
- Rapid manufacturing

Research is applied to a range of sectors including aerospace, automotive, medical, consumer products and power engineering

## **Materials, Mechanics and Structures Division**

Specialist areas of research within the Materials, Mechanics and Structures Division include the following:

### **The Nottingham Centre for Geomechanics**

Mathematics and civil and mining engineering addressing issues across geotechnical engineering areas, including:

- Centrifuge modelling
- Constitutive and numerical modelling
- Laboratory and in-situ testing
- Soil and rock structure interaction
- Transportation geotechnics
- Underground excavation and tunnelling

### **The Centre for Structural Engineering and Construction**

- Computational engineering
- Concrete structures
- Construction management
- Structural mechanics
- Wind mechanics

### **Advanced Materials Research Group**

Materials processing and characterisation, including:

- Hydrogen storage materials
- Laser processing
- Nanomaterials engineering
- Nanotubes
- Novel photonic glasses
- Surface engineering

### **Bioengineering Research Group**

Biomaterials and biomechanics, including

- Cardiac medical devices
- Cell surface interactions and biocompatibility
- Integrated systems biology
- Spinal mechanics
- Tissue engineering

### **Polymer Composites Research Group**

Manufacture and performance of advanced fibre reinforced composites spanning automotive, aerospace, wind energy and medicine areas, including:

- Development of novel manufacturing processes
- Materials characterisation
- End-of-life and recycling
- Mechanical performance
- Process simulation

### **Structural Integrity and Dynamics Research Group**

Development and application of advanced boundary element and non-linear finite element, including:

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- Damage mechanics
- Software, and stress analysis of composites
- Fatigue, creep and creep-fatigue of aeroengine and powerplant materials and structures
- Contact mechanics
- Crack propagation
- Micro-electro-mechanical sensors and actuators
- Modelling, balancing and control of machines, stochastic mechanics in structural dynamics and energy losses in heavy vehicle tyres and suspension
- Experimental and computational (FE and CFD) investigations of aeroengine shafts, support structures, bearings and oil systems

## **Process and Environmental Division**

Specialist areas of research within the Process and Environmental Division include the following:

### **Microwave Processing**

- Process engineering
- Electrical and microwave engineering
- Materials handling

Research is applied to areas such as food, fuel and energy, minerals processing, pharmaceuticals and recycling

### **Biorenewables and Bioprocessing**

- Bioprocess engineering
- Use of enzymes and microbial cells to produce chemicals from renewable feedstocks

### **Fluid and Particle Processes**

Research covers almost every aspect of chemical and environmental engineering, including:

- Environmental flows
- Particle and fluid processing
- Phase separation
- Multiphase flows and mixtures of liquids and gases
- Oil and gas transportation
- Heat transfer
- Minerals and product waste
- Nanoparticles
- Fluid mechanics and dynamics
- Mine ventilation systems
- Contaminated land and soils

Research is applied to areas such as energy and mining industries, pharmaceutical processing, product design and recycling