



Information Services Collection Policy: Department of Mechanical, Materials and Manufacturing Engineering

Author(s):	Jenny Coombs, Kwing-So Choi
Audience:	University of Nottingham
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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 Mechanical, Materials and Manufacturing 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

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 mechanical, materials and manufacturing 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 mechanical, materials and manufacturing 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 Mechanical, Materials and Manufacturing 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:

- Advanced materials
- Aerodynamics
- Aerospace manufacturing technology
- Aerospace materials
- Aircraft propulsion systems
- Alloys
- Automated manufacture
- Automotive vehicle dynamics

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- Behaviour of materials
- Biomaterials
- Biomechanics and instrumentation
- Biomedical engineering
- Cell Structure and Function
- Ceramics and glasses
- Chemical equilibria, rate processes and spectroscopy
- Composites
- Computer aided engineering
- Computer Integrated and Flexible Manufacture
- Computer modelling systems
- Computer programming
- Concurrent engineering
- Conservation and recycling of materials
- Control and instrumentation
- Design and manufacture
- Design visualisation
- Dynamics
- e-business
- Electromechanical systems
- Electron-optical and x-ray techniques
- Energy efficiency for sustainability
- Engineering mechanics
- Entrepreneurship and business
- Ergonomics (cognitive, physical and industrial)
- Finite element analysis
- Fluid dynamics and mechanics
- Food factory designs and operations
- Health safety and risk
- Heat transfer
- Human-computer-systems
- Human factors
- Human Structure and Function
- Information technology
- Innovations management
- Internal combustion engines
- Joining technology
- Lean manufacturing
- Lipid metabolism and oxidative phosphorylation
- Logistics and supply chain management
- Management of quality
- Managing operations
- Manufacturing process capability
- Manufacturing strategy
- Marketing
- Materials and materials forming
- Mathematics
- Measurement and control
- Mechanics of solids
- Mechatronics
- Metal forming
- Modelling and simulation
- Near net shape manufacture
- Operations planning and control
- Plant location and design
- Polymer engineering
- Production and inventory management
- Project management
- Rapid product development
- Robotics and automation technology
- Signals and metabolic regulation
- Stress analysis
- Structural vibration
- Supply chain management
- Surface engineering
- Sustainable manufacturing
- Thermodynamics and fluid mechanics
- Toxicology
- Transport materials
- Turbulence and turbulent flows

3.2.2. Research

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Research areas may fall within the seven research divisions within the Faculty, but most notably within the Manufacturing Group, Materials, Mechanics and Structures Group and the Energy and Sustainability Group. Specialist areas of current research interest include the following:

Advanced manufacturing technology

Research in this area covers manufacturing science and technology development and industrial applications across a range of sectors including aerospace, automotive, consumer products, medical and power engineering. Specific areas of research include:

- Intelligent automation and assembly
- Laser processing
- Lightweight structures manufacturing
- Machining and condition monitoring
- Metal forming
- Micro-and nano-manufacturing
- Precision manufacturing
- Responsive manufacturing
- Robotics
- Sustainable manufacturing

Manufacturing technology

Research in this area covers innovative solutions to specific industry needs. Specific areas of research include:

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

Human Factors

Research in this area covers people's characteristics and behaviours at work, home, travel and leisure to drive user-centred design and implementation for products and systems. Specific areas of research include:

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

Advanced materials

Research in this area covers materials processing and characterisation. Specific areas of research include:

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

Bioengineering

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Research in this area covers biomaterials and biomechanics. Specific areas of research include:

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

Polymer composites

Research in this area covers manufacture and performance of advanced fibre reinforced composites in a number of sectors spanning automotive, aerospace, wind energy and medicine. Specific areas of research include:

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

Structural integrity and dynamics

Research in this area covers advanced boundary element and non-linear finite element applications to resolve fundamental engineering problems. Specific areas of research include:

- Contact mechanics
- Crack propagation
- Damage mechanics, software and stress analysis of composites
- Experimental and computation investigations of aeroengine shafts, support structures, bearings and oil systems
- Fatigue, creep and creep-fatigue of aeroengine and powerplant materials and structures
- 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

Thermofluids

Research in this area covers the performance and technology of reciprocating engines, turbomachinery and motors; flow visualisation, flow control and drag reduction; CFD models, applications and mathematical techniques. Specific areas of research include:

- Aeroengine transmissions
- Appropriate technology
- Computational and experimental fluid dynamics
- Heat transfer
- Internal combustion engines
- Instrumentation and flow measurement
- Turbulence

Where there is overlapping interest or joint research projects with other departments, schools and faculties, the Science & Engineering Faculty

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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 Mechanical, Materials and Manufacturing 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.

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

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.

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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 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 Mechanical, Materials and Manufacturing 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 Mechanical, Materials and Manufacturing Engineering

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- ABI/Inform
- Applied Mechanics Review
- British Standards Online
- Business Source Premier
- Cambridge Scientific Abstracts including:
 - Abstracts in New Technologies and Engineering (ANTE)
 - CSA Technology Research Database (including Metadex)
 - Engineered Materials Abstracts
 - Materials Business File
 - Mechanical Engineering Abstracts
- Derwent Innovations Index
- eBrary E-books
- Ei Compendex
- Ergonomics Abstracts
- FAME
- Keynote Market Intelligence Reports
- Knovel eBook and Reference Library
- Intel Reports
- Occupational health and Safety Information Service
- Science Direct
- Scopus
- Standards Infobase Lite
- 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 Chemical Society
- American Mathematical Society
- American Institute of Physics
- Annual Reviews
- ASME (American Society of Mechanical Engineers)
- Business Source Premier (EBSCO)
- Cambridge Journals Online
- Emerald
- Highwire Press
- IEEE/IET Electronic Library
- INSPEC
- Ingenta Connect
- IOP journals
- Kluwer
- Oxford University Press
- Proceedings of the Institution of Mechanical Engineers
- Royal Society of Chemistry
- 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.

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Those currently charged to the Department of Mechanical, Materials and Manufacturing Engineering book fund are:-

- ASM Handbook
- Knovel Nanotechnology
- Society of Plastics Engineers

3.12. Theses and eDissertations

Printed copies of PhD theses are kept in the George Green 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 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.

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

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- 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://workspace.nottingham.ac.uk/download/attachments/62358464/Library+Collection+Relegation+Policy+2009.pdf>

3.19. Collection development

The collection will be developed to support teaching and research activity in the Department of Mechanical, Materials and Manufacturing 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

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induction, longer sessions arranged through the Graduate School and tailored sessions for the Department of Mechanical, Materials and Manufacturing Engineering.

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