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# Mechanical Engineering Collection Development Policy

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## **Mechanical Engineering Collection Development Policy**

University Libraries, University of Nebraska-Lincoln

Virginia Baldwin, December, 2009

Approved: CDC, December 16, 2009

### **I. GENERAL ACADEMIC PROGRAM INFORMATION**

The Department of Mechanical Engineering offers a B.S. It also offers an M.S. degree and participates in the "Chemical and Materials Engineering Field" and the "Mechanics and Energetics Field" options of the Unified Ph.D. Program of the College of Engineering and Technology. The Department offers coursework in heat transfer, fluid mechanics, solar energy engineering, the design and construction of machinery, manufacturing processes, aerodynamics, metallurgy, and nuclear engineering. The major research interests of the Department include metallurgical engineering, thermal-fluid mechanics, and systems and design engineering.

The following represents overlapping interests with other departments:

**Agricultural Engineering** Shop operations, metallurgy, hydraulics, farm machine design

**Chemical Engineering** Fuels and combustion, thermodynamics, atomic power, fluid flow, metallurgy

**Civil Engineering** Pumps and other fluid mechanical devices, cranes, hoists, hydrology, sanitary engineering, structures

**Computer Science** Cybernetics

**Construction Management** Boilers and furnaces, HVAC (Heating Ventilation and Air Conditioning) contracts and specifications

**Electrical Engineering** Power plants

**Engineering Mechanics** Kinematics, dynamics, vibrations, fluid mechanics, systems and design engineering, metallurgy

**Industrial Engineering** Safety

**Mathematics** Dynamics, vibrations, fluid mechanics elasticity, statics, Laplace transforms, differential equations, kinematics

**Physics** Radiation, rheology, thermodynamics, heat transfer, atomic physics, transport theory, solid state theory, properties of matter, metallurgy

**Chemistry** Nuclear physics, crystallography, metallurgy

**Geology** Metallurgy

Consultant projects of direct benefit to Nebraska industry include magnetic gas dynamic studies, heat transfer, aerodynamic heating, pneumatic conveying of fly ash, hydrogen transfer, prevention of grain dust explosions, crop drying, minimization of corrosion in water distribution systems, fusion, nuclear fission economics and waste disposal, and improved turbines for wind energy.

The accreditation body for the Department is the Accrediting Board for Engineering and Technology. One of its library collection criteria states, "The library collection should reflect the

existence of an active acquisition policy, which policy should include specific acquisitions on the request and recommendation of the faculty of the engineering unit."

## **II. GEOGRAPHICAL COVERAGE**

Materials limited to a specific country or region are not acquired unless dealing with the analysis of the failure of a specific engineering work such as a nuclear power plant. This restriction applies to all Levels of intensity.

## **III. CHRONOLOGICAL COVERAGE**

Materials limited to the historical treatment of the subject matter are not acquired unless specifically requested by the Department. This restriction applies to all levels of intensity.

## **IV. IMPRINT DATE**

Only materials published in the current year are acquired unless specifically requested by the Department. Special requests are restricted to materials published in the last three or four years, unless the item is a "classic." This restriction does not apply to periodical backfiles. Backfiles are acquired in microformat when possible.

## **V. FORMAT/TYPE AND LEVEL OF MATERIALS**

Emphasis is on periodicals, serials, and monographs. A research level collection is maintained.

## **VI. LANGUAGES**

Only English language publications should be acquired at all levels of intensity. English translations for journal literature and technical reports in German, Russian, and French are purchased.

## **VII. SPECIAL FACTORS**

Mechanical Engineering materials are located in the Engineering Library.

Timeliness is a critical factor in the acquisition of many conference publications because editions are usually limited to a small number of copies. This is especially true in the case of societies and university departmental publishers.

All current publications of the following organizations are acquired:

American National Standards Institute

American Society for Testing and Materials

National Bureau of Standards

National Aeronautics and Space Administration (low-numbered publications in various series)

Publications of the following societies are acquired on a selective basis:

Acoustical Society of America  
American Academy of Mechanics  
American Ceramic Society  
American Concrete Institute  
American Institute of Aeronautics and Astronautics  
American Institute of Chemical Engineers  
American Mathematical Society  
American Nuclear Society  
American Society for Nondestructive Testing  
ASM International  
American Society of Civil Engineers  
American Society of Heating, Refrigerating, and Air-conditioning Engineers  
American Society of Mechanical Engineers  
Instrument Society of America  
International Federation of Automatic Control  
Materials Research Society  
Metallurgical Society of AIME  
Metals Society  
National Association of Corrosion Engineers  
Noise Control Federation  
Numerical Control Society  
Optical Society of America  
Society for Industrial and Applied Mathematics  
Society of Automotive Engineers  
Society of Manufacturing Engineers  
Society of Nondestructive Testing  
Society of Photo-optical Instrumentation Engineers  
Welding Institute.

The Superintendent of Documents, Government Printing Office, collection, in hardcopy or microformat, covers in part or wholly the following U.S. Government Departments or Agencies:

U.S. Atomic Energy Commission

U.S. Department of Energy  
U.S. Environmental Protection Agency  
U.S. Federal Energy Administration  
U.S. National Institute for Occupational Safety and Health  
U.S. National Aeronautics and Space Administration  
U.S. Nuclear Regulatory Commission

Where coverage is not complete, the balance of publications for a federal government agency or department is located in most cases at Love Library.

The Engineering Library is a U.S. Patent and Trademark and Depository Library Program Library and the publications of the U.S. Patent and Trademark Office are included in the Engineering Library collection. All patent search aids that are provided by the U.S. Patent and Trademark Depository Library Program are retained.

Collections of federal standards and specifications are maintained as well as those of voluntary organizations such as the American National Standards Institute. Hardcopy is preferred.

### **VIII. CLASSIFICATION AND INTENSITY LISTING**

(The following are listed by LC Class, Subject, and then by Intensity Level)

QA 841 Kinematics RESEARCH  
QA 842-871 Dynamics RESEARCH  
QA 901-930 Fluid Dynamics. Hydrodynamics RESEARCH  
QA 931-939 Elasticity. Plasticity RESEARCH  
QC 39 Physical Measurements STUDY  
QC 81-114 Weights and Measures STUDY  
QC 125 Mechanics RESEARCH  
QC 141-168 Fluids. Fluid Dynamics RESEARCH  
QC 170-197 Solid State Physics - RESEARCH  
QC 176 Solids RESEARCH  
QC 176.8E45 Electronics RESEARCH  
QC 176.82-.84 Thin Films RESEARCH  
QC 189-189.2 Viscosity RESEARCH  
QC 221-246 Acoustics. Sound STUDY  
QC 251-338.5 Heat RESEARCH  
QC 301-310 Change of State STUDY

QC 310.15-319 Thermodynamics RESEARCH  
QC 319.8-338.5 Heat Transfer RESEARCH  
QC 786.4-791 Nuclear Reactors. Fission. Fusion RESEARCH  
QD 79 CHROMATOGRAPHY STUDY  
QD 146-157 Inorganic Chemistry STUDY  
QD 171-196 Inorganic Chemistry STUDY  
QD 510-536 Thermochemistry (including Combustion) RESEARCH  
QD 551-571 Electrochemistry STUDY  
QD 931-947 Physical Properties of Crystals RESEARCH  
TA 349-360 Applied Mechanics RESEARCH  
TA 365-367 Acoustics in Engineering RESEARCH  
TA 368 Standards RESEARCH  
TA 401-495 Materials RESEARCH  
TC 171-179 Technical Hydraulics STUDY  
TD 172-192 Environmental Pollution STUDY  
TD 881-890 Air Pollution STUDY  
TD 891-893.5 Noise Pollution STUDY  
TH 7005-7699 Heating and Ventilation RESEARCH  
TJ Mechanical Engineering RESEARCH  
TK 2896-2970 Direct Energy Conversion RESEARCH  
TK 7800-8360 Electronics RESEARCH  
TK 9001-9401 Nuclear Engineering RESEARCH  
TL Motor Vehicles. Aeronautics RESEARCH  
TN 1-126 Mining Engineering STUDY  
TN 500-535 Ore Dressing and Milling STUDY  
TN 550-580 Assaying STUDY  
TN 600-799 Metallurgy RESEARCH  
TP 875-888 Cement Industries STUDY  
TP 1101-1185 Plastics and Plastics Manufacturing STUDY  
TS 176-183 Manufacturing Engineering STUDY  
TS 200-788 Metal Manufactures RESEARCH