



## Mechanical & Aerospace Engineering

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Subject Page: <http://researchguides.case.edu>

### I. Purpose:

The primary purpose is to support the research and teaching activities of the Department of Mechanical & Aerospace Engineering. The Department of Mechanical and Aerospace Engineering offers programs leading to a Bachelor of Science in Engineering with a major in aerospace engineering, fluid and thermal engineering sciences, or mechanical engineering. It also offers programs leading to a Master of Science and Doctor of Philosophy. Publications in the field of mechanical and aerospace engineering are of interest not only to mechanical and aerospace engineers but also to researchers and students in a wide variety of disciplines, such as electrical engineering, materials science, medicine, etc.

### II. General Collection Guidelines:

**A. Languages:** English is the primary language of collection. Other languages may be considered with emphasis towards English translations.

**B. Chronological Guidelines:** Books and journals of current teaching and research interests are the primary focus. Retrospective collecting may occur at the request of a new faculty member or by a faculty member with a new research area.

**C. Geographical Guidelines:** There are no specific geographical limits of coverage, but primary focus would be North America.

**D. Treatment of Subject:** Selective acquisition of lower and upper division textbooks, laboratory manuals, introductory works and popular materials.

**E. Types of Materials:** Includes selective acquisition of treatises, encyclopedias, atlases, dictionaries, directories, abstracts, handbooks, and the proceedings and transactions of conferences and symposia. Theses and dissertations from other institutions and audio-visual material generally are excluded. All formats of materials will be considered, while prominence may be placed on electronic resources or OhioLINK offerings.

Journals are collected in both print and electronic formats.

**F. Dates of Publication:** Emphasis is on current works with retrospective materials purchased selectively.



**G. Deselection:** Since the collection is considered a research collection, deselection is done with great care. Special consideration is given to the relevance of older materials to the study of the history of science. Older or fragile materials that cannot be deselected are considered for relocation to remote storage.

**H. Cooperative and Related Collections:** Case is a founding member of OhioLINK, the Ohio Library and Information Network. OhioLINK is a statewide consortium of public and private colleges and universities, the State Library of Ohio, and technical and community colleges supporting a combined central catalog of statewide holdings, selected online indexes, full-text databases, reference tools, ebooks, & image collections. OhioLINK's goal is to provide easy access to information and rapid delivery of library materials throughout the state. Collection development decisions regarding shared electronic resources are made through the OhioLINK Cooperative Information Resources Management (CIRM) Committee. Additional collaboration on collection management may occur with other centers or libraries, as needed.

**I. Other General Considerations:** The major areas of research in the Department of Mechanical & Aerospace Engineering are aerospace technology and transportation, combustion, dynamics of rotating machinery, engineering design, manufacturing, materials, microgravity research, multiphase flow research, orthopaedic engineering, robotics, tribology, and turbomachinery.

The department's research applies the principles of mechanics, thermodynamics, heat and mass transfer, and engineering design to problems in aeronautics, astronautics, biomechanics and orthopaedic engineering, biomimetics and biological inspired robotics, energy, environment, machinery dynamics, mechanics of materials, and tribology. Many of these activities involve strong collaborations with the Departments of Biology, Electrical Engineering and Computer Science, and Orthopaedics of the School of Medicine.

**J. Electronic Resources:** Additional considerations are put into the electronic resources and databases that support the research of this department. To see the Mechanical Engineering specific databases, proceed to <http://library.case.edu/databases/rdbindex.aspx?subject=318|422>. To see the Aerospace Engineering specific databases, proceed to <http://library.case.edu/databases/rdbindex.aspx?subject=318|406>.

### III. Observations and Qualifications by Subject and LC Class:

#### CDP Levels:

**A. Minimal Level:** Indicates that only highly selective purchases-- usually materials either for reference use, general interest, or for the support of a very specific research need--will be made.

**B. Instructional Level:** Indicates that standard works and selected current works will be required to support undergraduate and most graduate instruction or sustained independent study. This will include reference and fundamental bibliographic tools pertaining to the subject and a



selection of representative journals. Retrospective purchasing is usually limited to standard works.

**C. General Research Level:** Indicates that the library will acquire most of the materials required to support research through the doctoral degree level and the general research needs of the faculty. Allows for retrospective purchasing depending upon the characteristics and needs of the individual disciplines and their state of development in the collection.

**D. Comprehensive Level:** Indicates that all currently-published relevant material will be acquired. Involves extensive programs of retrospective purchasing and searching for lacunae.

**E. Intensive Level:** Indicates the library will strive to acquire all appropriate current and retrospective written or recorded materials in all languages, editions, translations, and formats; manuscripts and other archival materials are acquired extensively. This level is appropriate for the creation or maintenance of a collection serving as a national bibliographic resource.

Subject	LC Class	Location	CDP Collecting Level	Collection Manager	Collection Notes
<b>Mechanical Engineering – General:</b> Includes societies, dictionaries, directories, history, general works, energy conservation, mechanics applied to machinery, and mechanical movements.	TJ 1-209	KSL	B	Brian C. Gray	
<b>Mechanical Devices &amp; Figures, Automata, Ingenious Mechanisms, &amp; Robots</b>	TJ 210-211	KSL	C	Brian C. Gray	
<b>Control Engineering Systems &amp; Automatic Machinery:</b> Includes control systems and applications.	TJ 212-225	KSL	C	Brian C. Gray	Also see the Electrical Engineering & Computer Science Collection Management Policy.
<b>Machine Design, Drawing, &amp; Machinery</b>	TJ 227-253	KSL	C	Brian C. Gray	



<b>Manufacturing</b>					
<b>Engines &amp; Heat engines:</b> Includes steam engines, combustion engineering, heat pumps, heat exchangers, boilers, theory of heat engines, and thermodynamics.	TJ 254-265	KSL	C	Brian C. Gray	
<b>Turbines &amp; Turbomachines</b>	TJ 266-267	KSL	C	Brian C. Gray	
<b>Steam Engineering:</b> Includes steam boilers, power plants, engines, locomotives, and other steam engines.	TJ 268-740	KSL	C	Brian C. Gray	
<b>Miscellaneous Motors &amp; Engines:</b> Includes internal combustion, air, gas, oil engines, etc.	TJ 751-805	KSL	C	Brian C. Gray	
<b>Renewable Energy Sources:</b> Includes solar and wind.	TJ 807-830	KSL	B	Brian C. Gray	
<b>Hydraulic Machinery &amp; Pipelines</b>	TJ 836-935	KSL	B	Brian C. Gray	
<b>Vacuum Technology</b>	TJ 940	KSL	B	Brian C. Gray	
<b>Pneumatic Machinery</b>	TJ 950-1030	KSL	B	Brian C. Gray	
<b>Machinery - Not Prime Movers:</b> Includes millwork, axles, rotors, bearings, etc.	TJ 1040-1119	KSL	A	Brian C. Gray	
<b>Machine Shops &amp; Practices</b>	TJ 1125-1345	KSL	A	Brian C. Gray	
<b>Hoisting &amp; Conveying Machinery</b>	TJ 1350-1418	KSL	A	Brian C. Gray	
<b>Lifting &amp; Pressing Machinery</b>	TJ 1425-1475	KSL	A	Brian C. Gray	
<b>Agriculture (Farm) Machinery</b>	TJ 1480-1496	KSL	-	Brian C. Gray	



<b>Sewing Machines</b>	TJ 1501-1519	KSL	-	Brian C. Gray	
<b>Other Special Machinery:</b> Includes wrapping machines, sorting devices, coin operated machines, etc.	TJ 1530-1570	KSL	-	Brian C. Gray	
<b>Motor Vehicles &amp; Automotive Engineering</b>	TL 1-484	KSL	A	Brian C. Gray	
<b>Aeronautics &amp; Aeronautical Engineering</b>	TL 500-723	KSL	C	Brian C. Gray	
<b>Airplane Industry – Technical Aspects:</b> Includes airways (routes), airports & landing fields, aerodromes, and special topics.	TL 725-733	KSL	A	Brian C. Gray	
<b>Aeronautics - Miscellaneous Types:</b> Includes parachutes, kites, gliders, and models.	TL 750-778	KSL	A	Brian C. Gray	
<b>Rockets &amp; Propulsion</b>	TL 780-785	KSL	C	Brian C. Gray	
<b>Astronautics – Space Travel</b>	TL 787-1200	KSL	B	Brian C. Gray	
<b>Environmental Engineering in Space</b>	TL 1489-1575	KSL	B	Brian C. Gray	
<b>Astrionics - Electronic Equipment on Space Vehicles:</b> Includes telecommunication, guidance & control.	TL 3000-3285	KSL	B	Brian C. Gray	
<b>Astronautics - Ground Support, Operations, and Equipment.</b>	TL 4000-4050	KSL	B	Brian C. Gray	

\* This document will be reviewed on an annual basis or with significant departmental program changes.  
 Sept. 2005