I. PURPOSE/PROGRAM SUPPORT

The collection in mechanical and aerospace engineering supports the curricular and research activities of the Mechanical and Aerospace Engineering Department in the School of Engineering and Applied Science. Material is acquired to support teaching at the undergraduate level, teaching and research for graduate study, and faculty research interests. The department supports study leading to the degrees of B.S., M.S., and PhD. The post-masters Professional Degree Program leads to degrees of Applied Scientist or Engineer. Also offered is a certificate program in computer-integrated design in mechanical and aerospace engineering.

Current faculty research areas include astrodynamics, aerospace vehicle design, space missions, fluid mechanics, solid mechanics, materials science and engineering, mechanical design and kinematics, materials and molecular dynamics, acoustics, micro- and nano-fabrication, fracture mechanics and finite element analysis, combustion, heat transfer, solar energy, computer-aided design, and manufacturing.

Faculty carry out multidisciplinary basic and applied research through the GW Transportation Research Institute, National Crash Analysis Center, Institute for MEMS and LLSI Technologies, Flow Simulation and Analysis Group, Institute for Biomedical Engineering, Center for the Study of Combustion and the Environment, Institute for Materials Science, and the Joint Institute for the Advancement of Flight Sciences.

Master's degree students specialize in one the following areas: aerospace engineering; design of mechanical engineering systems; fluid mechanics, thermal sciences, and energy; industrial engineering; solid mechanics and materials science; and structures and dynamics.

Undergraduate students may specialize in the following areas: computer-aided design and manufacturing, energy conversion, power and propulsion systems, robotics, control systems, aerospace engineering, and biomechanical engineering.

A medical preparation option is open to students who wish to study toward the Doctor of Medicine degree or for further study in biomechanics and technology.
There are 13 full-time and 13 part-time faculty, 91 undergraduate majors and 19 graduate students in the department.

II. AREA RESOURCES

A. Washington Research Library Consortium (WRLC)

The collection at George Mason University's Fenwick Library duplicates and complements Gelman's holdings in mechanical and aerospace engineering. This collection and those of other Consortium libraries are available for use by students and faculty of GWU on-site, through direct borrowing or through the Consortium Loan Service.

B. Other area resources

Faculty and graduate students have access and borrowing privileges at the Chesapeake Information and Research Library Alliance (CIRLA) libraries. CIRLA libraries, such as the University of Maryland and Johns Hopkins University, have research level collections in engineering and are accessible to GWU students and faculty. Some faculty have affiliations with local research agencies such as NASA Goddard Space Flight Center, NASA Langley Research Center, National Institute of Standards and Technology (NIST), and the Smithsonian Air and Space Museum, and use library collections at these facilities.

III. GENERAL COLLECTION GUIDELINES

A. Language

The primary language of the collection is English. Translations and major works in key research areas not available in English are acquired selectively.

B. Period of Coverage

Emphasis is on current scholarship.

C. Dates of Publication

Materials are considered as they are published. There is no systematic retrospective purchasing activity. Most items in the collection have been published within the last 40 years.

D. Geographical

Although no areas are excluded, the emphasis is on research and projects in industrialized nations.
E. Treatment of Subject

Emphasis is on upper undergraduate, graduate and research level materials. Monographs supporting study and research in broad topics as well as narrow subjects are selected for the collection. Lower division textbooks are ordinarily not purchased.

Journals are of primary importance and subscriptions constitute more than 93% of the expenditures for mechanical and aerospace engineering materials. Other serials, such as proceedings and transactions of conferences, symposia, etc., are acquired selectively.

Non-GWU dissertations, biographical works, and popular works are acquired selectively.

IV. DESCRIPTION OF MATERIALS AND FORMAT

Materials may be acquired in several formats: print, machine-readable files, videotapes, Internet subscriptions, microforms, CD-ROM, etc. The bulk of the collection is still print but periodicals are being increasingly purchased as online subscriptions. Software is acquired only as it accompanies print material. Materials in other formats are not normally acquired.

V. SPECIAL CONSIDERATIONS

No special considerations.

VI. DUPLICATION

In general, duplicate copies of a title are not purchased, the operating principle being to purchase more titles rather than extra copies of individual titles. However, if demand warrants, e.g. reserve readings, duplicate copies are bought on a case-by-case basis. Additional copies of titles may be accepted as gifts.

VII. SELECTION METHODS

A. Selection of new materials generally occurs through 5 sources:

1. The approval plan through Blackwell’s Book Services is monitored on a regular basis to ensure the profile meets our needs. Any changes in the curriculum, as indicated through library impact statements, are examined against possible changes in the approval profile.

2. Firm orders are initiated by the collection development librarian. Firm order requests from faculty and students are reviewed and approved by the collection development librarian.
3. Standing orders, memberships and serial requests are initiated by the collection development librarian.

4. Gifts are accepted under the same guidelines as other acquisitions. They must fit the criteria spelled out in this collection development policy.

5. The Library participates in the Federal Depository Library Program; collection development librarians review documents available through the U.S.G.P.O. for access or inclusion in the collection.

B. Deselection

The deselection process can be initiated by Gelman staff, by faculty, or by the collection development librarian. Final decisions on deselection are made by the collection development librarian. Items are checked for general condition, availability of newer or replacement editions and the continuing value of the content.

VIII. LIBRARY OF CONGRESS CLASSIFICATION

Materials for mechanical and aerospace engineering are located within several areas of the Library of Congress classification, including TJ (mechanical engineering), TK (electrical engineering), TL (transportation engineering), and TA (human engineering). Materials in mathematics (QA) and computer science (QA 76) may also be of interest.