I. PURPOSE/PROGRAM SUPPORT

The collection in engineering management and systems engineering supports the curricular and research activities of the Engineering Management and Systems Engineering Department in the School of Engineering and Applied Sciences. Material is acquired to support teaching at the undergraduate level, teaching and research for graduate study, and faculty research interests.


The department also offers Graduate Certificate programs in: information security management, knowledge management, systems engineering, crisis and emergency management, emergency management & public health, and software engineering and information systems management. The post-masters Professional Degree Program leads to degrees of Applied Scientist or Engineer.

Areas of focus for students in the graduate program in engineering management are crisis, emergency, and risk management; economics, finance, and cost engineering; engineering and technology management; environmental and energy management; knowledge management; information and security management; software engineering and information systems management.

Areas of focus for students in the graduate program in systems engineering are systems engineering and integration; management and reliability of infrastructure systems; and operations research and management science.

Current faculty research areas include information systems in developing countries; sociotechnical approaches to information systems; information technology and organizational change; information technology applications in banking; water quality management; environmental assessment; brownfields redevelopment environmental
sustainability; hydrogen economy; pricing and regulation of network services;
simulation-based optimization; stochastic control and optimization, neuro-dynamic
programming, automatic learning; dynamic games and distributed control/optimization;
optimization; mathematical modeling; engineering and technology management;
modeling, simulation and analysis of complex, adaptive systems; organizational
behavior; artificial intelligence (artificial neural networks and genetic algorithms);
strategic information systems; electronic commerce; intelligent information retrieval and
information visualization; statistical distributions; statistical quality control; history of
statistics; multivariate analysis; information theory; reliability and risk analysis; Bayesian
inference; quality control; stochastic models of operations research; time series analysis;
mathematical modeling approaches to complex information security challenges;
stochastic methods of structural dynamics and fatigue; fatigue and fracture reliability;
structural safety and reliability; smart infrastructure systems for natural hazard
mitigation; multiple criteria decision making; decision analysis; global optimization;
Bayesian statistical analysis; missile exchange modeling; optimal location problems;
evolution of technology and organizations; conditions that support economic
development; management of technology; economics and management of transportation
systems; history of engineering management; knowledge management; distribution
theory; risk management analysis; probabilistic risk analysis; dependence modeling for
uncertainty analysis; accelerated life testing; reliability analysis; engineering/expert
classification and financial engineering.

Faculty carry out multidisciplinary basic and applied research through the Institute for
Crisis, Disaster and Risk Management and the Institute for Knowledge and Innovation.

There are 21 full-time and 31 part-time faculty in the department, with 25 undergraduate
majors and 879 graduate students.

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 engineering management and systems
engineering. This collection and those of other Consortium libraries are available for
use by students and faculty of GW 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
GW students and faculty. Some faculty have affiliations with or research
sponsored by local federal agencies such as Department of Transportation,
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-GW 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. Journals in the field are scanned for relevant reviews. 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 engineering management and systems engineering are located within several areas of the Library of Congress classification, including T (systems analysis, operations research) and TA (engineering management, systems engineering). Materials on engineering management and systems analysis are also located in other areas such as TD (environmental engineering), TH (building construction), TJ (mechanical engineering) TK (electrical engineering), and TL (transportation engineering). Materials in QA (mathematics), QC (computer science), and HD (management) may also be of interest.