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Collection Development Policy, Mechanical and Aerospace Engineering

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Collection Development Statement

Department: Mechanical and Aerospace Engineering
Drafted by: Buenaventura "Ven" Basco
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Collection Purpose

To support teaching and research at both the graduate and undergraduate levels as well as faculty research the library selects and maintains materials in mechanical, materials, and aerospace engineering. The Department of Mechanical and Aerospace Engineering is part of the College of Engineering and Computer Science. Degrees offered which the library supports include:

GRADUATE PROGRAMS

Mechanical Engineering, Ph.D., M.S.

The Doctor of Philosophy (Ph.D.) degree is intended for students with a master's degree in mechanical or aerospace engineering or a closely related discipline. It is designed to allow students to study in depth, with emphasis on research in Aerospace Systems, Mechanical Systems, or Thermofluids.

The Master of Science degree in Mechanical Engineering (M.S.M.E.) is intended primarily for a student with a bachelor's degree in mechanical or aerospace engineering or a closely related discipline obtained from a recognized accredited institution. The master's program offers six tracks in the MSME program: Accelerated BS to MS, Mechanical Systems, and Thermofluids. Each track offers both thesis and nonthesis option.

Aerospace Engineering, M.S.

The Master of Science degree in Aerospace Engineering (M.S.A.E.) is designed to prepare students for careers as engineers in aerospace. The aerospace engineering program offers a Master of Science in Aerospace Engineering (M.S.A.E.) degree with three tracks: Space Systems Design and Engineering and Thermofluid Aerodynamic Systems Design and Engineering and Accelerated BS to MSAE. Space Systems Design and Engineering includes the fields of controls and dynamics, space environment, instrumentation and communications, structures and materials, thermal analysis, and design. Thermofluid Aerodynamic Systems Design and Engineering includes the fields of controls and dynamics, aerodynamics, propulsion, thermal analysis, and design.

UNDERGRADUATE PROGRAMS

Mechanical Engineering, B.S.

The Mechanical Engineering curriculum teaches students to apply principles of engineering, science, and mathematics (including multivariate calculus and differential equations) to model, analyze, design and realize physical systems, components or

processes, and prepares students to work professionally in both thermal and mechanical systems areas.

Aerospace Engineering, B.S.

The Aerospace Engineering program prepares graduates to have knowledge covering aeronautical engineering, and some topics from astronautical engineering. The program also prepares graduates to have design competence that includes integration of aeronautical or astronautical topics.

Collection Description

The collections of the College of Engineering and Computer Science support the research and teaching interests of the faculty and students in both the graduate and undergraduate programs in mechanical and aerospace engineering. General works are collected at the introductory level. Popular treatment is acquired selectively. Juvenile materials are excluded.

Relevant Indexes Include:

Abstracts in New Technology & Engineering
Applied Science and Technology
ASTM Compass
Engineering Index
IEEE Xplore
Web of Science (Science Citation)
Mechanical and Transportation Engineering Abstracts
Proceedings of the Institution of Mechanical Engineers
Scitation

Collection Guidelines

Chronology: Emphasis/restrictions

Currency is extremely important in the mechanical and aerospace engineering fields. Emphasis is on current research although journal holdings are maintained indefinitely. Historical material is collected very selectively.

Languages: Emphasis/restrictions

Materials are primarily collected in English. Monographs are exclusively in English. Major foreign journals may be acquired, but the English translation is preferred when it is available.

Geography: Emphasis/restrictions

Geographical limits do not apply. However most of the collection has United States imprints.

Subject Treatment

Curriculum areas of emphasis include:

Mechanical Engineering

Analytical mechanics
Applied mechanics
Automatic control systems
CAD/CAM
Dynamics
Elastic properties of solids
Elasticity and plasticity
Fluid mechanics
Friction
Heat transfer
Hydraulics
Machine design and drawing
Mechanical movements
Pneumatic machinery
Rheology
Solid mechanics
Solid-state physics
Thermodynamics

Aerospace Engineering

Aeronautics
Aeronautical engineering
Aircraft
Astronautics. Space Travel
Materials
Motors and propulsion
Rocket propulsion. Rockets

Material Formats: Emphasis/restrictions

The Library collects journals, monographic series, monographs, and reference works in print and electronic formats. Dissertations and theses from the University of Central Florida are collected; those from other schools are ordered very sparingly.

Ephemera, pamphlets, preprints, off-prints, technical reports, newsletters, manuscripts, juvenile materials, problem sets are usually excluded.

Textbooks are generally excluded unless they are standard works or considered classics.

Publication Dates

Emphasis is on current materials; within the last ten years with most emphasis on the last three years.

Subjects Collected and Collecting Levels

Key: 0= Libraries do not collect; 1= Minimal level; 2=Basic information level; 3=Instructional support level; 4=Research level; 5=Comprehensive

Subject	Range	Existing Level	Desired Level
<i>Mechanical Engineering</i>			
Engineering machinery, tools and implements	TA 213-215	4	4
Mechanics of engineering. Applied mechanics	TA 349-359	4	5
Mechanical engineering and machinery	TJ 1-1570	4	5
Thermodynamics	QC 310.15-319	4	4
Analytic mechanics	QA 801-939	4	4
Solid state physics	QC 176	4	4
Engineering design (CAD-CAM)	TA 174	4	4
<i>Aerospace Engineering</i>			
Aeronautics. Aeronautical engineering	TL 500-777	4	4
Rocket propulsion. Rockets	TL 780-785.8	4	4
Astronautics. Space travel	TL 787-4050	4	4
Vibration control	TA 355-625	3	4
Nonlinear vibration	QA 935, TA 355-653	3	4
Robotics	TJ 211-223	3	4
Control analysis	QA402.3, TJ 213	3	4
Dynamics	QA 845-871	3	4

Subjects Excluded

Biography is selectively acquired. Software is generally excluded. Standards are collected very selectively.

Cooperative arrangements and related collections

Other areas of the university that are impacted by the mechanical and aerospace engineering program holdings and/or relate strongly include: Chemistry, Physics, and other Engineering disciplines. The library is a member of the Patent and Trademark Depository program and makes patent information available for use by the faculty and students also.

Collection Management Issues:

Replacement

Any book lost or stolen, which appears on the Missing titles sheets distributed by the Circulation Department to the library liaison, will be considered for replacement. The title may be ordered directly from the Collection Development replacement budget fund at the discretion of the Head of Acquisitions and the Collection Development Librarian for

Mechanical and Aerospace Engineering if the title is essential to the collection. Outdated or superseded editions will not be reordered unless there is a specific need.

Retention/Deselection

The decision to dispose of certain items takes into account such factors as past circulation, date of publication, nature of the material, and the judgment of interested faculty members as to the continued usefulness of the material to their subject areas.

Outdated, unused and no longer reliable materials are removed from the collection.

Deteriorated materials can be repaired, replaced or discarded.

Periodicals or electronic resources will be weeded when:

The library has only fragments of a title, which do not justify the cost of filling out the run with an alternative format.

A title has not been subscribed to for more than ten years and its value is not apparent.

A title has not been currently subscribed to for at least five years and the related programs have been discontinued.

A title has been replaced by electronic access (or a different form of electronic access) and its retention is no longer necessary or advisable.

Out of Print Acquisition

World Wide Web access to out-of-print dealers now often makes location of these items relatively convenient. As with other acquisitions, out-of- print titles will be acquired if there is a clear need to have the specific item in the collection and the price is reasonable.

Preservation

The Collection Development Librarian will consult with the Special Collections Department on all matters relating to the care, repair, and safekeeping of all circulating library materials regardless of format type. Preservation issues of importance to the Collection Development Librarian include:

Collection maintenance of existing materials – rehousing, rebinding, repair, conservation, media transfer

Deacidification projects - selected titles, whole collections, or partial collections

Reformatting materials to microfilm or digital images

Questions related to gifts-in-kind that might require preservation attention before materials are added to the collection.