**Mechanical Engineering**

**Collection Development Policy Statement**

I. This policy covers the Mechanical Engineering Department within the Ira A. Fulton College of Engineering and Technology. The Harold B. Lee Library supports the curricular and research needs of the department through monographic purchases and periodical and database subscriptions.

II. Curriculum and Research

A) Curriculum

Mechanical Engineering students approach complex problems from a background including a wide distribution of selective emphasis in mechanics, physics, statistics and mathematics. The abilities they develop at BYU include problem solving through comparative analysis, mathematical and computational modeling, and experimental discovery and analysis. All students gain professional experience in a research, capstone, or internship project, usually in close association with faculty. Together these experiences provide excellent preparation for employment or for graduate studies in physics, other sciences, engineering, medicine, law, or business. The department aims to produce creative, skilled problem solvers who are technically sound researchers that are able to innovate and move ideas into viable products and processes. The department offers a BS in Mechanical Engineering, and integrated BS/MS degree program, a MS in Mechanical Engineering, a joint MS/MBA program, and a PhD in Mechanical Engineering. There are 30 full-time, 5 adjunct and 2 Emeritus faculty in the department.

B) Research

The department emphasizes ALBDF (Absorption Line Blackbody Distribution Function), BABEL (BYU Applied Biomechanics Engineering Laboratory), BESD (BYU Engineering Systems Design), C-UAS (Center for Unmanned Aircraft Systems), BYU-CMR (BYU Compliant Mechanisms Research), Design Exploration, Flapping Flight, FLOW Lab (Flight, Optimization, Wind Laboratory), Fluids Lab, Flux Lab, Friction Stir Research Lab, MAGICC Lab, Microstructure Research Lab, BYU Neuromechanics Research Lab, PACE (Partners for the Advancement of Cooperative Engineering Education), ParaPAx (CAD/CAE/CAM), RaD Lab (Robotics and Dynamics Laboratory), v-CAx (BYU CADLab), BYU Baja Car, BYU Supermileage solar energy car and WAVES (Internal Wave Propigation). Several of these emphasis are part of the Capstone effort.

III. Subject and Formats

A) Scope

The library collects materials properties and mechanical engineering monographs and periodicals on theory and practice at a level 4 (research) to support the faculty and graduate students and common texts on a level 2 (selective) to support demand. Other subject areas are also collected on a level 3 (curricular).

B) Type

Original research, abstracts, reference works are collected extensively. Compendex, the search engine representing the collective indexing work of the Engineering Index® is the preferred index for periodical literature, however a number of other databases provide excellent entries into the literature including ProQuest’s Materials Research Database, ProQuest Research Library, and the SAE Digital Library. Popular treatments, textbooks, and course materials are collected selectively. Other types are generally not collected

C) Format

Monographs, serials in electronic form are collected preferentially. Audiovisual materials are collected selectively. Microforms and manuscripts are generally not collected.

D) Materials published during the last 10 years are collected extensively. Materials published during the previous 20-30 years are collected very selectively. Materials published prior to 1950 are generally not collected.

E) English is the preferred language and is collected extensively. Other languages are generally excluded or collected very selectively based on unique content that has not been translated into English

F) Geographic Focus

No particular area of the World is favored however most materials come from North America and Europe

IV. Other

A) Related Collections and Overlap

There is overlap in many other areas but only as mechanical engineering is applied to those areas. Theory is separate and is generally found only in the engineering literature.

B) Cooperative resources and programs

Various consortia arrangements on a library wide scale have been entered into to ensure full text availability of periodicals and access to normally very expensive collections such as the ASTM standards online.

V. Classed Analysis

**Mechanical Engineering**

**Classed Analysis**

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| **LC Classification** | **Subject** | **Collecting Level** |
| TJ | MECHANICAL ENGINEERING AND MACHINERY |  |
| TJ163.13-163.25 | Power resources | Research |
| TJ163.26-163.5 | Energy conservation | Research |
| TJ170-179 | Mechanics applied to machinery. Dynamics | Research |
| TJ181-210 | Mechanical movements | Research |
| TJ210.2-211.47 | Mechanical devices and figures. Automata. Ingenious mechanisms. Robots (General) | Research |
| TJ212-225 | Control engineering systems. Automatic machinery (General) | Research |
| TJ227-240 | Machine design and drawing | Research |
| TJ241-254.7 | Machine construction (General) | Teaching |
| TJ255-265 | Heat engines | Research |
| TJ266-267.5 | Turbines. Turbomachines (General) | Research |
| TJ268-740 | Steam engineering | Teaching |
| TJ603-695 | Locomotives | Teaching |
| TJ751-805 | Miscellaneous motors and engines, including gas, gasoline, diesel engines | Research |
| TJ807-830 | Renewable energy sources | Research |
| TJ836-927 | Hydraulic machinery | Research |
| TJ940-940.5 | Vacuum technology | Research |
| TJ950-1030 | Pneumatic machinery | Research |
| TJ1040-1119 | Machinery exclusive of prime movers | Teaching |
| TJ1125-1345 | Machine shops and machine shop practice | Teaching |
| TJ1350-1418 | Hoisting and conveying machinery | Teaching |
| TJ1425-1475 | Lifting and pressing machinery | Teaching |
| TJ1480-1496 | Agricultural machinery. Farm machinery | Representative |
| TJ1501-1519 | Sewing machines | Representative |

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| **LC Classification** | **Subject** | **Collecting Level** |
| TL | MOTOR VEHICLES. AERONAUTICS. ASTRONAUTICS |  |
| TL1-4050 | Motor vehicles. Aeronautics. Astronautics | Research |
| TL1-484 | Motor vehicles. Cycles | Research |
| TL500-777 | Aeronautics. Aeronautical engineering | Research |
| TL780-785.8 | Rocket propulsion. Rockets | Research |
| TL787-4050 | Astronautics. Space travel | Research |