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Biological Systems Engineering Collection Development Policy

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Biological Systems Engineering Collection Development Policy

University Libraries, University of Nebraska-Lincoln
Dana W. R. Boden, Liaison Librarian, December 2009
Approved: CDC, December 16, 2009

I. GENERAL ACADEMIC PROGRAM INFORMATION

The Biological Systems Engineering collection supports the teaching, research and service activities of the department and the entire university community. Its primary audience is the faculty, staff, and students of the Biological Systems Engineering Department, uniquely situated in both the College of Engineering and the Institute of Agriculture and Natural Resources (IANR) through the College of Agricultural Sciences and Natural Resources (CASNR). The primary focus of the collection is support for the undergraduate and graduate curricula for Biological Systems Engineering. Specific and transient research needs of Biological Systems Engineering faculty and graduate students are supplemented through Interlibrary Loan. The focus of the Biological Systems Engineering collection is diverse in nature as it encompasses disciplines that are well established within colleges and departments in the university structure. Materials are not purchased for the general public and community users, though they may benefit from the collection for their information needs.

Biological Systems Engineering Department

Part of the University since soon after its founding, Biological Systems Engineering had its beginnings with the original Industrial College, comprised of the School of Agriculture and the School of Engineering, established in 1872. Precursors to the department were the Farm Mechanics Department, and later, the Department of Agricultural Engineering. Faculty associated with the department were among the founders, over a century ago, of what is now the American Society of Agricultural and Biological Engineers (ASABE), with several serving as President over the years. In 1990, the department changed its name to Biological Systems Engineering — the first accredited program of its kind in the country.

The Department of Biological Systems Engineering offers a highly diversified course of study. The B.S. and M.S. degrees are awarded through the department. The Ph.D. is offered through the “unified engineering doctoral program of the College of Engineering.” Thus, students planning to do doctoral work in Biological Systems Engineering must meet the graduate admission requirements of the College of Engineering and Technology.

Three majors are available at the undergraduate level, two administered through the College of Engineering, and the third administered through the College of Agricultural Sciences and Natural Resources:

- Agricultural Engineering majors plan their course of study towards engineering in agriculture. Three areas of emphasis are offered; a) machine design engineering, b) soil and water resources engineering, and c) sensors and controls engineering.

- Biological Systems Engineering majors plan their course work towards engineering of living systems. There are also three emphasis areas offered; a) biomedical engineering, b) food and bioproducts engineering, and c) environmental and water resources engineering.
- In the Mechanized Systems Management program, students plan programs related to agriculture and take core classes in combination with specific 'options', such as production, technical, processing operations, and business.

Graduate degrees offered include the Master of Science in Agricultural and Biological Systems Engineering and Master of Science in Mechanized Systems Management. There are also three interdepartmental masters programs offered: Master of Science in Environmental Engineering; Master of Engineering; and Master of Applied Science.

The interdepartmental doctorate program offers the Doctor of Philosophy in the Unified Engineering Program in the field of Agriculture and Biological Systems Engineering or in the field of Biomedical Engineering.

Research of major importance to this department and related disciplines emphasizes irrigation management and systems, animal waste management, machine design, biomedical imaging, tissue engineering and gene delivery. Research endeavors are a valuable component of the department's mission to the students, faculty, state, region, and world. Research is conducted in university labs, and in the field utilizing four Research and Extension Centers located throughout Nebraska. In addition, faculty members also work overseas in developing agricultural and irrigation systems of benefit to specific locales. The Nebraska Tractor Testing Facility, which tests most types of tractors, has an international reputation.

The Department of Biological Systems Engineering is accredited by the American Board for Engineering and Technology through the College of Engineering and Technology.

II. Geographical Coverage

Material collected on biological systems engineering generally emphasizes the North American continent, but includes worldwide coverage for comparative purposes.

III. Chronological Coverage

There are no chronological limitations.

IV. Imprint Date

Emphasis is on current materials.

V. Format

Both print and electronic resources are purchased as well as online books. Electronic formats are preferred for current periodicals. For monographic works, the format choice is based primarily on price. Electronic formats are preferred for works that will be utilized on both campuses and those that support extension programs.

VI. Language

English is the preferred language at all levels of intensity. Materials in other languages are acquired in response to specific requests. English translations are preferred to the original language at all levels of intensity.

VII. Special Factors

All publications of the following societies and associations are acquired: American Society of Agricultural and Biological Engineers and the Soil and Water Conservation Society.

The government documents collection in C. Y. Thompson Library is generally important to all areas of agriculture. United States Department of Agriculture (USDA) publications account for the majority of the document literature used by researchers in agricultural disciplines, and to a lesser degree important publications also come from the Department of the Interior and the Environmental Protection Agency.

VIII. Electronic Databases

The University Libraries has acquired a number of electronic databases, including some full-text, which support Biological Systems Engineering and related areas: AGRICOLA, ASABE Technical Library, Biological Abstracts, CAB Abstracts, EI Compendex, Medline, Water Resources Abstracts, and Web of Science, all of which are interdisciplinary databases. These databases greatly enhance the research capability and provide convenient and timely access to various resources.

IX. Classification and Intensity Level

(The following are listed by LC Class, Subject and then by Intensity Level)

GB 651-708 Water. Hydrology and hydrography RESEARCH

GB 980-1197.7 Groundwater and watersheds RESEARCH

GB 1201-1399 Rivers and floods RESEARCH

HD 1690-1702 Water rights RESEARCH

HD 1711-1741 Irrigation. Reclamation RESEARCH

KFN 446-450 Nebraska water resource laws STUDY

KFN 451-455 Nebraska public land law STUDY

NA 8200-8260 Farm architecture STUDY
QC 762.6.M34 Magnetic resonance imaging STUDY
QC 851-999 Meteorology. Climatology RESEARCH
R 856 Biomedical engineering (General) RESEARCH
R 857.T55 Biomedical engineering. Tissue engineering STUDY
R 857.U48 Biomedical engineering. Ultrasonics STUDY
R858 Medical informatics RESEARCH
S 1-523 Agriculture (General) RESEARCH
S 600 Agricultural meteorology. Crops and climate RESEARCH
S 671-760 Farm machinery and farm engineering RESEARCH
S 770-790 Agricultural structures. Farm buildings STUDY
TA 710 Soil mechanics periodicals STUDY
TC 401-526 River, lake and water supply-engineering STUDY
TC 801-978 Irrigation engineering and drainage RESEARCH
TD 172-196 Environmental pollution STUDY
TD 201-429 Water supply, pollution and reuse STUDY
TD 811 Animal wastes RESEARCH
TD 884-894 Special types of pollution STUDY
TD 920-930 Rural sanitary engineering and agricultural wastes STUDY
TH 4911-4965 Farm buildings STUDY
TJ 1480-1496 Agricultural machinery. Farm machinery RESEARCH

This policy was edited and updated with the very helpful input and support of John Gilley, Book Chair for Biological Systems Engineering.