

Iowa State University Library  
Collection Development Policy  
General Engineering

## **I. General Purpose**

The collection supports the faculty and students of the College of Engineering in their curriculum needs that are not covered by the library collections supporting specific departments. In particular, the General Engineering collection supports the basic program for professional engineering curricula. In addition, this collection meets the needs of others on campus for interdisciplinary and practical engineering information. This collection also serves to support the needs of research and extension centers associated with the College of Engineering, such as the Center for Industrial Research and Service (CIRAS).

## **II. History (from the College of Engineering Web site)**

Iowa State's College of Engineering is one of the largest and most prestigious programs in the nation, offering 13 undergraduate and nine graduate majors to more than 4,200 students. Currently, the College is the nation's 12th largest in undergraduate enrollment. It ranks fifth in size of engineering schools at land-grant universities.

On July 2, 1862, President Abraham Lincoln signed into law a measure to establish one college in each state on federal land. Two months later, Iowa became the first state to accept the terms of the new law called the Morrill Land Grant College Act.

Iowa Agricultural College - later renamed Iowa State College - opened less than five years later, offering degrees in agriculture and "mechanics." From the mechanics course, the school began almost immediately to develop programs in several branches of engineering. The 26 members of Iowa State's first graduating class included four civil and two mechanical engineers.

Through 1891, more than 100 students received engineering degrees from Iowa State. From 1892 to 1903, another 250 engineering students graduated from Iowa State. Today, there are almost 35,000 living alumni from the college.

In 1904, with the appointment of Anson Marston as dean, engineering became a division of Iowa State College and its curricula began expanding. By 1914, Iowa State had organized departments of agricultural, ceramic, chemical, and architectural engineering. The agricultural engineering program was the first in the nation.

With Iowa State's elevation to university status in 1959, the Division of Engineering became the College of Engineering.

## Key Events in the History of the College of Engineering

- 1869 - First students arrive at Iowa Agricultural College to study agriculture and mechanics.
- 1871 - The Course in Mechanics is separated into civil and mechanical engineering programs.
- 1872 - First graduating class includes six engineers.
- 1879 - Iowa State grants the nation's first master's degree in engineering.
- 1891 - Work initiated by the Physics Department leads to the establishment of an electrical engineering program.
- 1896 - Name changes to Iowa State College of Agriculture and Mechanic Arts
- 1904 - Anson Marston becomes first dean. Iowa Engineering Experiment Station is established as the nation's first research agency in an engineering school.
- 1908 - First four-year professional agricultural engineering program in the nation is established.
- 1913 - Engineering Extension Service established.
- 1926 - Iowa State confers its first doctorate degree in engineering.
- 1930 - Researchers (including students) pioneer development of gasohol, a blend of gasoline and corn-based ethanol.
- 1939 - World's first electronic digital computer is built by Iowa State physics professor John Atanasoff and electrical engineering graduate student Clifford Berry.
- 1947 - Ames Laboratory of the Department of Energy is established.
- 1959 - Name changes to Iowa State University of Science and Technology. The Division of Engineering becomes the College of Engineering. Department of Nuclear Engineering puts Iowa's first nuclear reactor into operation.
- 1963 - Center for Industrial Research and Service is established to provide support for Iowa businesses.
- 1971 - David Nicholas, electrical engineering graduate student, invents an encoding process that helps make FAX machines a staple in office equipment.
- 1997 - College of Engineering breaks ground on \$61 million Engineering Teaching and Research Complex, the largest capital construction project in Iowa State's history.
- 2003 - The two-building Engineering Teaching and Research Complex is completed. Howe Hall and Hoover Hall contribute to ISU's efforts to meet 21st century needs for engineering education, research and outreach.

### **III. Iowa State University Program**

Academic departments within the College of Engineering:

- Aerospace Engineering
- Agricultural and Biosystems Engineering
- Biomedical Engineering
- Chemical and Biological Engineering
- Civil, Construction, and Environmental Engineering
- Electrical and Computer Engineering
- Engineering Mechanics (graduate program)

- Industrial and Manufacturing Systems Engineering
- Industrial Technology
- Materials Science and Engineering
- Mechanical Engineering

Service units within the College of Engineering include the Center for Industrial Research and Service, Engineering International Programs, and Engineering Distance Education.

#### **IV. Subject Boundaries**

This collection includes materials classed in the Library of Congress call number ranges listed in Section XII below. Some materials with LC call numbers in the listed ranges may be more appropriate for other collections, most commonly Mathematics or Reference. Works on the technology of the Internet and on computer networking are generally in the purview of the General Engineering collection, though research-oriented works on these topics are relevant to the Electrical and Computer Engineering collection. Works on social, commercial or graphic aspects of the Internet, or dealing with the use of the Internet to locate information, will most likely be more appropriate to some other collection of the ISU Library.

#### **V. General Collection Guidelines**

##### A. Linguistic.

English is the primary language of the collection, though works in other languages may be selected if they are of sufficiently high quality or interest.

##### B. Geographical Areas.

No geographical areas are excluded, as engineering research is worldwide. Works which emphasize the law, regulations or standards that apply in the United States are collected more comprehensively than those emphasizing the law, regulations or standards specific to any other country or group of countries not including the United States.

##### C. Types of Materials Collected.

Monographs, monographic series, journals, proceedings, society publications, and handbooks are purchased to support teaching, learning, and interdisciplinary research. Societies publications are well represented. Periodicals represent a large part of the collection. Indexes, abstracts and other reference materials are collected under a separate policy for Reference.

##### D. Format of Materials Collected

Online versions of materials in this collection are preferred as long as their quality, price, archiving options and licensing conditions meet the Library's needs. No format is excluded except in cases when special equipment not owned by the Library would be needed to use the work in question.

## **VI. Specific Collection Guidelines**

Additional materials are chosen for the collection as needed to support teaching at introductory levels in the College of Engineering. Other additional materials support interdisciplinary research in the College of Engineering and associated institutes or centers. Some additional materials purchased for the General Engineering collection are those dealing with technology at the level of the general readership rather than a research level, or those dealing with engineering practice methods.

On July 1, 2000, the Fire Service Institute, a unit of Iowa State University Extension was dissolved and replaced by the Fire Service Training Bureau, a unit of the Iowa Department of Public Safety. This transfer of responsibility for fire service training within the state of Iowa ended one feature of the General Engineering collection; previously there had been special emphasis on materials relating to firefighting and fire safety purchased in support of the work of the Fire Service Institute. Materials on firefighting and fire safety should continue to be collected, but at a more general level.

## **VII. Other Resources Available**

Intute: Science, Engineering and Technology

Intute: Science, Engineering and Technology (<http://www.intute.ac.uk/sciences>) offers a free, easy to use, and powerful tool for discovering the best Internet resources for teaching, learning and research, covering the physical sciences, engineering, computing, geography, mathematics and environmental science.

It is created and run by a team of information specialists from Heriot-Watt University and the University of Manchester, with input from a number of other universities in the UK. The site features a catalogue of quality science, engineering, and technology resources (selected by subject consultants), targeted search engines, and events databases. Resources being added to the catalogue are selected, catalogued, classified and subject-indexed by experts to ensure that only current, high-quality or useful resources are included.

Linda Hall Library

The Linda Hall Library in Kansas City, Missouri is the largest privately-funded library of science, engineering and technology in the United States that is open to the public. The collection of the Linda Hall Library includes over one million volumes dating from 1472. Holdings include journals, books, conference proceedings and preprints, government

documents, government contracted technical reports, and standards and specifications covering all areas of science, engineering and technology, excluding clinical medicine. The library is also a patent and trademark depository library. The Linda Hall Library offers document services, including document delivery and traditional interlibrary loans, reference services, a fee-based search service, bibliographic verification service, and tours. As of 1998, the Linda Hall Library also incorporates the collection and services formerly provided by the Engineering Societies Library, which was founded by the AIChE, AIME, ASCE, ASME, and IEEE societies.

#### **SPIE—The International Society for Optical Engineering**

SPIE (known once as the Society for Photo-optical Instrumentation Engineers) is an international technical society dedicated to promoting the engineering and scientific applications of optical, photonic, imaging and optoelectronic technologies through its education and communications programs, meetings and publications. Among the many services the Society offers are the sponsorship, planning, and execution of technical conferences, product exhibitions, and symposia; the publication and distribution of archival professional journals, full-manuscript conference proceedings, newsletters, and optics-related texts and monographs; and the development and delivery of professional continuing education programs. In addition, SPIE provides numerous services to its members, including on-line electronic databases, electronic bulletin board and networking services, and employment assistance.

### **VIII. Cross-references to Collection Policies**

- Aerospace Engineering
- Agricultural and Biosystems Engineering
- Chemical and Biological Engineering
- Civil, Construction, and Environmental Engineering
- Computer Science
- Electrical and Computer Engineering
- Energy
- Industrial & Manufacturing Systems Engineering
- Materials Science and Engineering
- Mathematics
- Mechanical Engineering
- Reference

### **IX. Creation date**

2000 (Kristine K. Stacy-Bates)

### **X. Revision History**

2007 (Kristine K. Stacy-Bates)

## **XI. LC Classes and Ranges**

T1-10.8  
T11.8-55.3  
T61-379  
T391-TA348  
TA365-368  
TA1501-1629  
TA 1651-2040  
TF  
TH9025-9745  
TK5105-5105.9  
TL1-484  
TS1-149  
TS195-199  
TS780-2301

## **XII. Bibliographer name**

Kristine K. Stacy-Bates