Purpose of the Collection

The electrical and computer engineering collection of Western Libraries is intended to support the research activities of faculty, students and staff as well as the instructional requirements of undergraduate and graduate programs. The collection also provides support for teaching and research in related fields such as other engineering disciplines and the sciences.

The Allyn & Betty Taylor Library is the primary location for material supporting the research and instructional needs of the Department of Electrical and Computer Engineering. A strategic priority of Western Libraries is to acquire and provide access to information in digital formats. A number of holdings for Electrical and Computer Engineering are digital, making them available anywhere, anytime.

Program Information

In the department of Electrical and Computer Engineering, there are undergraduate and graduate degree programs offered as below:

Undergraduate degree programs

- ECE degrees with options
  - Electrical Engineering
  - Electrical Engineering with Wireless Option
  - Electrical Engineering with Power Systems Option
  - Electrical Engineering with Biomedical Signals and Systems Option
  - Computer Engineering
  - Software Engineering
  - Software Engineering with Embedded Systems Option
  - Software Engineering with Health Informatics Option
  - Mechatronics Engineering
• ECE dual degrees
  ▪ Electrical Engineering with Applied Mathematics
  ▪ Electrical Engineering with Business
  ▪ Electrical Engineering with Computer Science
  ▪ Electrical Engineering with Law
  ▪ Electrical Engineering with Medical Biophysics
  ▪ Electrical Engineering with Medicine
  ▪ Computer Engineering with Computer Science
  ▪ Software Engineering with Business
  ▪ Software Engineering with Law

Graduate degree programs

• Research Based Programs (M.E.Sc. and Ph.D.)
  ▪ Master of Engineering Science (M.E.Sc.)
  ▪ Doctor of Philosophy (Ph.D.)

• Coursework Based Program – Master of Engineering (M.Eng.)
  
  Areas of Study include
  ▪ Communications Systems and Data Networking
  ▪ Engineering in Medicine
  ▪ Power Systems Engineering
  ▪ Robotics and Control
  ▪ Software Engineering

Subject Areas Covered

Collections activity will address selected aspects of electrical, computer and software engineering. In particular, collection development and management will focus on materials supporting the main areas of research interest for the Department, which include Applied Electrostatics & Electromagnetics, Biomedical Systems, Communication Systems and Data Networking, Microsystems & Digital Signal Processing, Power Systems Engineering, Robotics & Control, and Software Engineering. A more detailed listing of subject areas covered for instruction can be found in the Appendix at the end of this document.

Format

Acquisitions will include monographs, book series, journals, and selected engineering standards. Resources, particularly journals, in digital format are preferentially selected over their print counterparts. Alternate formats, such as CD-ROM, video, DVD, and microform, are considered on an individual request basis.
Language

English is the primary language of collection. Materials in other languages may be acquired to support the curriculum. English translations of major works in other languages are also acquired.

Source of Publication

Sources of publication are primarily Canada, the United States, the United Kingdom, and Western Europe. Material published in other regions may be considered on request and will be evaluated for quality and relevance.

Date of publication

Materials with a recent imprint date are preferred. Older material will be considered upon request.

Exclusions

With the exception of individual requests and some selective acquisitions, the following types of material are not acquired:

- Computer or software manuals
- Conference proceedings
- Course textbooks at the lower undergraduate level
- Popular engineering or science publications
- Theses or dissertations from other institutions (that are not included as part of the ProQuest Dissertations & Theses Database)

Related collections and cooperation

The Western Libraries collection for Electrical and Computer Engineering is supplemented by collections in related fields, such as Computer Science, Pure Mathematics, Applied Mathematics, Physics, and Biomedical Engineering.

Standards and specifications from various governmental bodies and organizations are selectively collected to support undergraduate and graduate course instruction, thesis research at the M.E.Sc. and Ph.D. levels, and faculty research. The emphasis is on current standards and specifications, but some retrospective standards are available. Requests to purchase historical standards (superceded or withdrawn) will be considered, but the library’s ability to fulfil such requests will be limited by budgetary considerations and the availability of older standards.
Gifts

The library gratefully accepts gifts of materials in good condition. As considerable expense is incurred by Western Libraries in the receipt and processing, the library only accepts gifts of materials which support current teaching and research needs, or which are not adequately represented in the collection.

Managing the Collection

In order to ensure that collections remain optimally useful for our patrons, it is necessary to analyze collection usage and available space regularly. Items will need to be selectively removed from the onsite collection from time to time.

Duplicate items that are no longer required to support the curriculum, and damaged items that can no longer be replaced may be removed from the collection at the discretion of the Subject Librarian.

Items that are unique to Western may be transferred to a storage facility. Material housed in these storage facilities is available on request through the Library Catalogue.

Criteria for transfer selection include, but are not limited to, the following:

1) Outdated or previous editions of titles
2) Medium- to low-use items
3) Material that is available in alternate formats, i.e., online
4) Materials that would benefit from storage in a more controlled environment.

Consult the Subject Librarian for further details about these criteria.

Resources to aid in acquisition of material

- Subject collection profiles developed in collaboration with the book vendor, Coutts Information Services, to capture publications that match relevant Library of Congress Subject Headings
- Websites of society publishers
- Catalogues from major publishers
- Direct requests from library patrons through the online form
Appendix

Subject Areas in Support of Instruction (U = Undergraduate; G = Graduate)

Actuator Principles, Integration and Control (G)
Adaptive Controls (G)
Advanced Digital Control Systems (G)
Advanced Digital Signal Processing (U)
Advanced Digital Systems (U)
Advanced Image Processing and Analysis (G)
Advanced Medical Imaging (U)
Advanced Topics in Information and Communication Security (G)
Advanced Topics in Software and System Design (G)
Advanced Topics in Software Engineering (G)
Agent-Oriented Design: Principles, Methodologies and Applications (G)
Algorithms and Data Structures for O-O Design (U)
Analog IC Design (G)
Applied Control Systems (U)
Applied Probability (G)
Applied Probability Theory (G)
Behavioral Model of Mixed Signal Systems (G)
Biomedical Ultrasound (G)
Circuits & Systems (U)
CMOS VLSI Circuits and Technology (G)
Communication Electronics I (U)
Communication Systems (U)
Communication Theory (U)
Communications System Design and Modeling (G)
Computational Electromagnetics (G)
Computer Architectures (U)
Computer Arithmetic (G)
Computer Networks Applications (U)
Computer-based Power Systems Protection (G)
Control Systems (U)
Conventional, renewable and Nuclear Energy (U & G)
Cooperative Distributed Systems Engineering Technologies and Applications (G)
Data Warehousing and Data Mining for Business Intelligence (G)
Database Management Systems (U)
Design of Mechatronic Systems (U)
Digital Communication Systems (G)
Digital Logic Systems (U)
Digital Modulation and Coding (G)
Digital Signal Processing (G)
Digital Systems Design using FPGA (G)
Discrete Structures for Software Engineers (U)
Distributed Control System (DCS) and Fieldbus (G)
Electric Circuits (U)
Electric Machines (U)
Electric Power Systems (U)
Electrical Measurements & Instrumentation (U)
Electrical/Computer Engineering Project (U)
Electromagnetic Theory (U)
Electromechanics (U)
Electronic Instrumentation and Measurement (U)
Electrostatic Theory & Engineering Applications (G)
Embedded Real-Time Systems (G)
Engineering Analysis of Physiological Systems (U & G)
Engineering Communication (G)
Engineering Planning and Project Management (G)
Fault Tolerant Control Systems (G)
Flexible AC Transmission Systems FACTS (G)
High Frequency Power Electronic Converters (G)
Human-Computer Interaction (U)
Image-Guided Interventions (G)
Information Security (U & G)
Intellectual Property for Engineers (G)
Introduction to Digital Image Processing (U & G)
Introduction to Electrical Engineering (U)
Introduction to Electrical Instrumentation (U)
Introduction to Semiconductor Devices (U)
Introduction to Signal Processing (U)
Introduction to VLSI (U)
Linear Systems and Modern Control Theory (G)
Magnetic Circuits and Transmission Lines (U)
Microcomputer Engineering (U)
Microprocessors and Microcomputers (U)
Modeling and Control of Power-Electronic Converters (G)
Nanofabrication Techniques (G)
Networking Principles, Protocols & Architectures (U & G)
Non-Linear Control Theory (G)
Numerical Methods for Analyses and Design of High-speed Electrical Circuits (G)
Software Quality, Reliability and Maintenance (G)
Software Verification and Validation (G)
Operating Systems for Software Engineering (U)
Optical Networks (G)
Optimization Techniques
Performance Evaluation and Modeling of Computer Networks (G)
Photonic Devices: Principles and Applications (G)
Power Electronics (U & G)
Power System Protection (U)
Programming Fundamentals (U)
Radiation and Propagation (U)
Random Signals, Adaptive and Kalman Filtering (G)
Real-Time and Embedded Systems (U)
Risk Assessment and Management in Engineering Systems (G)
Robot Control (G)
Robot Manipulators (G)
Soft Computing and Intelligent Systems (G)
Software Construction (U)
Software Design (U)
Software Engineering Design (U)
Software Engineering for Human-Computer Interface Design (G)
Software Evolution (G)
Software Project & Process Management (U)
Software Quality, Reliability and Maintenance (U)
Software Requirements & Analysis (U)
Software Verification & Validation (U)
Statistical Signal Processing (G)
Telerobotics (G)
Theoretical Foundations of Software Engineering (U)
Theory and Application of Protective Relays (G)
Vector Control of Rotating Machines (G)
Very-Deep-Submicron Silicon Devices and Circuits (G)
VLSI and Microelectronics (U)
Web Technologies (U)
Wireless Communications: Design and Simulation (G)
Wireless Digital Communications Systems (G)
Wireless LANs and WANs (U & G)
Wireless Sensor Nets (G)