Bachelor of Engineering (BEng) in
INFORMATION ENGINEERING TECHNOLOGY

The curriculum of the BEng in Information Engineering Technology is designed for those engineering students who intend to launch a career in the design, installation, maintenance, and repair of computer networks used for critical data entry, transfer, retrieval, and management. Coursework in the program is practice-oriented and prepares students to work in a variety of computer-intensive environments, such as technical organizations, small or large businesses, product design or manufacturing companies, and data-directed services. The breadth of training in hardware, software, troubleshooting equipment, and other computer tools will enable the graduate to work in a variety of roles in such environments as network designer, network support and administrator, project manager, data applications or computer communications engineer, test and integration manager or technologist in business applications. The graduate of this curriculum will be a computer network specialist, but broadly versed in mathematics, physics, computer science, and business fundamentals.

The program objectives are the following:
1. Graduates will be situated in growing careers involving design, development and support of Information Technology Systems.
2. Graduates will perform effectively individually and in teams.
3. Graduates will have demonstrated involvement in high technical and leadership roles.
4. Graduates will have accumulated technical expertise to remain globally competitive.

Completion of this program should result in the following student outcomes:
1. An appropriate mastery of the knowledge, techniques, skills, and modern tools of their disciplines.
2. An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology.
3. An ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes.
4. An ability to apply creativity in the design of systems, components, or processes appropriate to program educational objectives.
5. An ability to function effectively on teams.
6. An ability to identify, analyze, and solve technical problems.
7. An ability to communicate effectively.
8. A recognition of the need for, and an ability to, engage in lifelong learning.
9. An ability to understand professional, ethical, and social responsibilities.
10. A respect for diversity and knowledge of contemporary professional, societal, and global issues.
11. A commitment to quality, timeliness, and continuous improvement.
12. The application of Computer and network hardware, operating systems, system and network administration, programming languages, applications software, and databases in the building, testing, operation, and maintenance of hardware and software systems.
13. The application of electrical, electronic, telecommunications, and digital signal propagation fundamentals in the building, testing, operation and maintenance of hardware and software systems.
14. The ability to design, implement, maintain, and provide for the security of facilities involved with the processing and transfer of information.
15. The ability to apply project management techniques to facilities that process and transfer information.
16. The ability to apply discrete mathematics, and probability and statistics in the support of facilities that process and transfer information.

Students are advised not to attempt upper division coursework (300 and 400-level classes) unless they have earned a GPA of 2.50 or better in all IT, CS, and CT coursework taken at the 100 and 200-level.
GENERAL EDUCATION (43 crs)

Area I: Communications (9 crs)
    ENG 111  English Composition I (3)
    ENG 116  Technical Writing (3)
    SPCH 130  Public Speaking (3)

Area II: Mathematics (11 crs)
    MATH 145  Introduction to Probability and Statistics (3)
    MATH 162  Calculus I (4)
    MATH 163  Calculus II (4)

Area III: Laboratory Science (8 crs)
    PHYS 215/L  Engineering Physics I (4)
    PHYS 216/L  Engineering Physics II (4)

Area IV: Social/Behavioral Sciences (6–9 crs)
    ECON 201  Microeconomics (3)
    Elective (3-6)*

Area V: Humanities and Fine Arts (6–9 crs)
    PHIL 220  Ethics (3)
    Electives (3-6)*

*Electives in the General Education Common Core are to be chosen from Area IV and V as shown on pages 25-27.

Health, Physical Education & Recreation (1 cr)
    Electives (1)

MAJOR REQUIREMENTS (85 CRS)

Computer Science (3)
    CS 201  Math Foundations of Computer Science (3)

Electrical, Electronic, and Computer Engineering (37)
    EECE 105L  Microcomputer Systems I (4)
    EECE 132  Computer Networks I (3)
    EECE 152L  Computer Programming I (4)
    EECE 231  Intermediate Programming I (3)
    EECE 238L  Computer Logic Design (4)
    EECE 329  Human Computer Interaction (3)
    EECE 330  Computer Networks II (3)
    EECE 342  Wireless and Mobile Computing (3)
    EECE 355  Web Engineering (4)
    EECE 435  Software Engineering (3)
    EECE 440  Advanced Computer Networks (3)

Information Technology (20)
    IT 210  IT Systems (3)
    IT 250  Introduction to Databases (3)
    IT 350  Database Management (3)
    IT 410  Information Assurance/Security (3)
    IT 490  IT Capstone I (4)
    IT 491  IT Capstone II (4)

Business (9)
    ENGR 474  Engineering Project Management (3)
    Electives in ENGR at 4x-level (6)
Support Technologies (16 crs)
  ENGR 110  Introduction to Engineering Technology (4)
  EECE 203L  Circuit Analysis I (4)
  Upper-division electives from EECE/CS/IT courses (8).

TOTAL CREDITS 129

SUGGESTED SEQUENCE OF COURSES
  HFA = Humanities & Fine Arts (Area V)
  SBS = Social/Behavioral Science (Area IV)

First Semester (18 crs)
  HFA/SBS Elective (3)
  EECE 152/L Computer Programming I (4)
  ENGR 110  Introduction to Engineering Technology (4)
  EECE 105/L Microcomputer Systems I (4)
  EECE 132  Computer Networks I (3)

Second Semester (16 crs)
  ENG 111  English Composition I (3)
  MATH 162  Calculus I (4)
  IT 210  IT Systems (3)
  EECE 330  Computer Networks II (3)
  EECE 231  Intermediate Programming (3)

Third Semester (17 crs)
  ENG 116  Technical Writing (3)
  MATH 162  Calculus II (4)
  PHYS 215/L Engineering Physics I with Lab (4)
  EECE 342  Wireless and Mobile Computing (3)
  IT 250  Intro. to Databases (3)

Fourth Semester (16 crs)
  PHYS 216/L Engineering Physics II with Lab (4)
  CS 201  Math Foundations of CS (3)
  HFA/SBS Elective (3)
  MATH 145  Introduction to Probability and Statistics (3)
  SPCH 130  Public Speaking (3)

Fifth Semester (15 crs)
  EECE 238/L Computer Logic Design (4)
  EECE 329  Human Computer Interaction (3)
  EECE 203/L Circuit Analysis I (4)
  PHIL 220  Ethics (3)
  HPER Elective (1)

Sixth Semester (16 Crs)
  IT 350  Database Management (3)
  EECE 440  Advanced Computer Networks (3)
  ENGR 474  Engineering Project Management (3)
  EECE 355  Web Engineering (4)
  EECE 435  Software Engineering (3)

Seventh Semester (15 Crs)
  IT 410  Information Assurance/Security (3)
  IT 490  Capstone I (4)
  EECE/CS/IT Elective 3X or 4X (2)
  ENGR 4X  Elective (3)
ECON 201  Microeconomics (3)

**Eighth Semester (16 Crs)**

IT  491  Capstone II (4)
EECE/CS/IT  Elective 3X or 4X (3)
EECE/CS/IT  Elective 3X or 4X (3)
ENGR 4X      Elective (3)
HFA/SBS      Elective (3)