
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 II (4)
- PHYS 216/L Engineering Physics III (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)