Bachelor of Engineering (BEng)

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-orientated 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 versed in mathematics, physics, computer science, and business fundamentals.

Students are advised to not attempt upper division coursework (300 and 400-level classes) until you have earned a GPA of 2.50 or better in all IT, CS, and CT coursework taken at the 100 and 200-level. Failure to maintain an overall GPA of 2.00 or better in all coursework will be sufficient cause for being dropped from the program.

GENERAL EDUCATION REQUIREMENTS (39)

<table>
<thead>
<tr>
<th>Area 1: Communications (9)</th>
<th>COMPLETED</th>
<th>PLANNED TIMELINE (By Semester)</th>
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</thead>
<tbody>
<tr>
<td>ENG 111 English Composition I (3)</td>
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<tr>
<td>Prerequisite: ENG 109 or adequate score on the Course Placement Evaluation</td>
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<tr>
<td>ENG 116 Technical Writing (3)</td>
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<td>Pre-requisite: ENG 111</td>
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<td>SPCH 130 Public Speaking (3)</td>
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<th>Area 2: Mathematics (3)</th>
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<tbody>
<tr>
<td>MATH 145 Introduction to Probability and Statistics (3)</td>
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<tr>
<td>Pre-requisite: MATH 130 or adequate score on the Course Placement Evaluation</td>
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<tr>
<th>Area 3: Laboratory Science (9)</th>
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</thead>
<tbody>
<tr>
<td>ENGR 215 Physics for Engineers I (2)</td>
<td>______</td>
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<tr>
<td>Pre-requisite: ENGR 121L</td>
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<tr>
<td>ENGR 217L Physics for Engineers III (3)</td>
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<tr>
<td>Pre-requisite: ENGR 122L</td>
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<tr>
<td>Elective Laboratory Science (4)</td>
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</table>

You must select a course from the following list:

- ASTR 110/L Introduction to Astronomy with Lab (4)
- PHYS 122/L Applied Physics II with Lab (4)
- PHYS 216/L Engineering Physics II with Lab (4)
- CHEM 121/L General Chemistry I with Lab (4)
- ES 112/L Introduction to Environmental Science with Lab (4)
- BIOL 101/L Current Topics in Biology with Lab (4)
- GEOL 110/L Physical Geology with Lab (4)

<table>
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<tr>
<th>Area 4: Social/Behavioral Sciences (6-9)</th>
<th>COMPLETED</th>
<th>PLANNED TIMELINE (By Semester)</th>
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</thead>
<tbody>
<tr>
<td>ECON 201 Microeconomics (3)</td>
<td>______</td>
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<tr>
<td>Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation</td>
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<tr>
<td>Elective (3)</td>
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<tr>
<td>Elective (3)</td>
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</table>

You must select courses from at least one different discipline area from the following list:

- ANTH 101/L Physical Anthropology w/Lab (4)
- ANTH 102 Intro to Social & Cultural Anthropology (3) (Fall)
- ANTH 111 Language and Culture (3)
- ANTH 207 Cultures of New Mexico (3)
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH</td>
<td>Indian Culture of the Southwest</td>
</tr>
<tr>
<td>ECON</td>
<td>Macroeconomics (3)</td>
</tr>
<tr>
<td>ECON</td>
<td>Microeconomics (3)</td>
</tr>
<tr>
<td>GEOG</td>
<td>World Geography (3)</td>
</tr>
<tr>
<td>PSCI</td>
<td>The Political World (3)</td>
</tr>
<tr>
<td>PSCI</td>
<td>Contemporary Political Issues (3)</td>
</tr>
<tr>
<td>PSCI</td>
<td>State and Local Government (3)</td>
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<tr>
<td>PSCI</td>
<td>The American Presidency (3)</td>
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<tr>
<td>PSY</td>
<td>General Psychology (3)</td>
</tr>
<tr>
<td>PSY</td>
<td>Theories of Personality (3)</td>
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<tr>
<td>PSY</td>
<td>Adolescent Psychology (3)</td>
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<tr>
<td>PSY</td>
<td>Psychology of Adjustment (3)</td>
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<tr>
<td>PSY</td>
<td>Abnormal Behavior (3)</td>
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<tr>
<td>PSY</td>
<td>Social Psychology (3)</td>
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<tr>
<td>PSY</td>
<td>Developmental Psychology (3)</td>
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<tr>
<td>SOC</td>
<td>Introduction to Sociology (3)</td>
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<td>SOC</td>
<td>Deviant Behavior (3)</td>
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<td>SOC</td>
<td>Ethnic and Intercultural Relations (3)</td>
</tr>
<tr>
<td>SOC</td>
<td>Social Problems (3)</td>
</tr>
<tr>
<td>SOC</td>
<td>Marriage and the Family (3)</td>
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<td></td>
<td>* Plus, topic courses with student advisor’s approval</td>
</tr>
</tbody>
</table>

**Area 5: Humanities and Fine Arts (6-9)**

Second Language (3)

Prerequisite: ENG 109 or adequate score on the Course Placement Evaluation

Electives (3-6 crs)

You must select courses from at least two different discipline areas

<table>
<thead>
<tr>
<th>Elective (3)</th>
<th>Elective (3)</th>
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Choose two electives from the following list:

- **ART**: Introduction to Art (3)
- History of Art I (3)
- History of NM Art & Architecture (3)
- History of Art II (3)
- Dance Appreciation (3)
- Children’s Literature (3)
- Literature of the Southwest (3)
- Native American Literature 1 (3)
- Native American Literature II (3)
- Readings in Literature (3)
- Study of Literature
- Mythology (3)
- Western Civilization I (3)
- Western Civilization II (3)
- History of the U.S. to 1877 (3)
- History of the U.S. from 1877 (3)
- History of the World Religions (3)
- Southwestern Women’s History (3)
- Chicano Experience in the US (3)
- American Indian History (3)
- History of New Mexico (3)
- Humanities I (3)
- Humanities II (3)
- Humanities of the Southwest (3)
- Why the Social Sciences Matter (3)
- Humanity and Creativity (3)
<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HUM 421</td>
<td>History, Literature, Art &amp; Philosophy (3)</td>
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<tr>
<td>MUS 103</td>
<td>Music History &amp; Literature I (3)</td>
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<tr>
<td>MUS 105</td>
<td>Music Appreciation (3)</td>
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<tr>
<td>MUS 218</td>
<td>Music History &amp; Literature II (3)</td>
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<tr>
<td>PHIL 110</td>
<td>Intro to Philosophical Problems (3)</td>
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<td>PHIL 111</td>
<td>History of Philosophy (3)</td>
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<td>PHIL 150</td>
<td>Critical Thinking (3)</td>
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<tr>
<td>PHIL 220</td>
<td>Ethics (3)</td>
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<tr>
<td>PIS 200</td>
<td>Introduction to Pueblo Indian Studies (3)</td>
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<tr>
<td>THE 120</td>
<td>Introduction to Theatre I (3)</td>
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<tr>
<td>THE 130</td>
<td>History of Theatre (3)</td>
</tr>
</tbody>
</table>

Plus, topic courses with advisor’s approval

### Area 6: First Year Experience (3)

- **FYE 101** Freshman Year Experience (3)
  
  Pre-requisite: None

### SUPPORT COURSES (8)

- **MATH 162E** Calculus I (4)
  
  Pre-requisite: MATH 155, ENGR 120

- **MATH 163E** Calculus II (4)
  
  Pre-requisite: MATH 162E

### MAJOR REQUIREMENTS (73)

#### Computer Science (3 crs)

- **CS 201** Math Foundations of Computer Science (3)
  
  Pre-requisite: EECE 152L

#### Electrical, Electronic, and Computer Engineering (32)

- **EECE 105L** Microcomputer Systems (3)
  
  Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation

- **EECE 132** Computer Networks I (3)
  
  Pre-requisite: None

- **EECE 152L** Computer Programming I (3)
  
  Pre-requisite: None

- **EEET 201L** Digital Systems (2)
  
  Pre-requisite: ENGR 121L

- **EECE 230** Introduction to Routing and Switching (3)
  
  Pre-requisite: EECE 132

- **EECE 231L** Intermediate Programming (3)
  
  Pre-requisite: EECE 152L

- **EECE 329** Human Computer Interaction (3)
  
  Pre-requisite: EECE 231L

- **EECE 330** Computer Networks II (3)
  
  Pre-requisite: EECE 132

- **EECE 351** Advanced Programming (3)
  
  Pre-requisite: EECE 231L

- **EECE 355** Web Engineering (3)
  
  Pre-requisite: EECE 231L and IT 250

- **EECE 440** Advanced Computer Networks (3)
  
  Pre-requisite: EECE 330

#### Information Technology (15)

- **IT 250** Introduction to Databases (3)
  
  Pre-requisite: EECE 152L

- **IT 350** Database Management (3)
  
  Pre-requisite: IT 250

- **IT 410** Information Assurance/Security (3)
  
  Pre-requisite: EECE 230 and EECE 330

- **IT 490** Capstone I (3)
  
  Pre-requisite: EECE 152L, Senior Standing

- **IT 491** Capstone II (3)
  
  Pre-requisite: EECE 152L, Senior Standing

#### Business (4)

- **ENGR 480** Engineering Management and Project Management (4)
  
  Pre-requisite: Permission of Academic Advisor
Support Technologies (19)

EECE 110L Introduction to Engineering (2)
Pre-requisites: None

ENGR 121L Introductory Math for Engineering Applications I (2)
Pre-requisite: MATH 150 or adequate score on the Course Placement Evaluation

ENGR 122L Introductory Math for Engineering Applications II (2)
Pre-requisite: ENGR 121L

Electives from EECE/CS/IT/MATH/ENGR (13). At least 10 upper division credits

TOTAL CREDIT HOURS 120

SUGGESTED SEQUENCE OF COURSES

First Semester (16)
FYE 100 First Year Experience (3)
ENGR 110L Introduction to Engineering (2)
ENGR 121L Introductory Math for Engineering Applications I (2) (First 8 weeks)
EECE 132 Computer Networks I (3)
ENGR 215 Physics for Engineers I (2) (second 8 weeks)
Elective Laboratory Science (4)

Second Semester (14)
ENG 111 English Composition I (3)
EECE 152L Computer Programming I (3)
ENGR 122L Introductory Math for Engineering Applications II (2)
EECE 230 Introduction to Routing and Switching (3)
EECE/CS/IT Elective lower or upper division (3)

Third Semester (15)
EECE 105L Microcomputer Systems (3)
ENG 116 Technical Writing (3)
PHYS 217L Physics for Engineering III (3)
MATH 145 Introduction to Probability and Statistics (3)
IT 250 Introduction to Databases (3)

Fourth Semester (15)
SPCH 130 Public Speaking (3)
ECON 201 Microeconomics (3)
EECE 231 Intermediate Programming (3)
CS/EECE/IT/MATH/ENGR Elective 3XX/4XX (3)
HFA Elective (3)

Fifth Semester (16)
MATH 162E Calculus I (4)
CS 201 Math Foundations of Computer Science (3)
EECE 329 Human Computer Interaction (3)
EECE 330 Computer Networks II (3)
IT 350 Database Management (3)

Sixth Semester (16)
MATH 163E Calculus II (4)
EET 201L Digital Systems (2)
EECE 355 Web Engineering (3)
ENGR 480 Engineering Management and Project Management (4)
CS/EECE/IT/MATH/ENGR Elective 3XX/4XX (3)

Seventh Semester (15)
EECE 440 Advanced Computer Networks (3)
IT 490 Capstone I (3)
SBS Elective (3)
Foreign Language (3)
EECE/CS/IT/MATH/ENGR Elective 3XX/4XX (3)

**Eighth Semester (13)**
- EECE 351 Advanced Programming (3)
- IT 410 Information Assurance/Security (3)
- IT 491 Capstone II (3)
- SBS or HFA Elective (3)
- EECE/CS/IT/MATH/ENGR Elective 3XX/4XX (1)

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**Educational Planning Form (Semester)**

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<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
<th>Summer</th>
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Advisor's Signature ____________________________

Student Signature ____________________________