COURSE TITLE | NUMBER | OFF. HR | PREREQUISITES
--- | --- | --- | ---
**REQUIRED COURSES WITHIN THE ENGINEERING COLLEGE (75 hrs)**

**CE+EE Core Courses (34 hrs)**

Orientation* | ENGR 100 | 0 | Admission to the College of Engineering
Introduction to Computing and Programming | CS 107 | 4 | Credit or concurrent registration in MATH 180
Introduction to Electrical and Computer Engineering | ECE 115 | F,Sp | 4 | Credit or concurrent registration in MATH 180
Circuit Analysis | ECE 225 | F,Sp | 4 | Credit or concurrent reg. in MATH 220; and C or better in PHYS 142 and ECE 115
Introduction to Logic Design | ECE 265 | F,Sp | 4 | MATH 180; and grade of C or better in ECE 115
Introduction to Embedded Systems | ECE 266 | F,Sp | 4 | CS 107; and credit or concurrent registration in ECE 265
Discrete and Continuous Signals and Systems | ECE 310 | F,Sp | 3 | MATH 220; and credit or conc.reg. in ECE 225 (ECE 210 for non-ECE students)
Electronics I | ECE 340 | F,Sp | 4 | Grade of C or better in ECE 225
Probability and Random Processes for Engineers | ECE 341 | F,Sp | 3 | Grade of C or better in MATH 210
Senior Design I | ECE 396 | F,Sp | 2 | ENGL 161; and senior standing
Senior Design II | ECE 397 | F,Sp | 2 | ECE 396
Professional Development Seminar | ECE 499 | F,Sp | 0 | Open only to seniors; and approval of the dept. Must be taken in the student's last semester of study.

**EE-only Core Courses (24 hrs)**

Introduction to Electromagnetics and Applications | ECE 322 | F,Sp | 4 | ECE 225
Solid-State Device Theory | ECE 346 | F,Sp | 4 | MATH 220, gr. of C or better in ECE 115, and a gr. of C or better in PHYS 142
Introduction to analog and digital communications | ECE 311 | F,Sp | 4 | Grade of C or better in ECE 310; and grade of C or better in ECE 341
Digital Signal Processing I | ECE 317 | F,Sp | 4 | Grade of C or better in ECE 310
Electronics II | ECE 342 | F,Sp | 4 | ECE 340
Principles of Automatic Control | ECE 350 | F,Sp | 4 | MATH 310; and gr. of C or better in ECE 310

**EE Technical Electives (17 hrs)**

No more than a total of two courses below the 400 level can be used to meet the technical electives requirement.
Also, at most one course from outside the Electrical and Computer Engineering Department may be used to meet the technical elective requirement.

Computer Communication Networks I | ECE 333 | F,Sp | 4 | CS 107; and ECE 341
Integrated Circuit Engineering | ECE 347 | F,Sp | 3 | CHEM 122/123 and grade of C or better in ECE 225
Computer Organization | ECE 366 | F,Sp | 3 | ECE 266; and credit or concurrent registration in CS 251
Pattern Recognition I | ECE 407 | Sp | 3 | MATH 220
Network Analysis | ECE 410 | F | 3 | MATH 310 and gr. of C or better in ECE 310
Introduction to Filter Synthesis | ECE 412 | Sp | 3 | Grade of C or better in ECE 310
Image Analysis and Computer Vision I | ECE 415 | F | 3 | MATH 310; or grade of C or better in ECE 310
Digital Signal Processing II | ECE 417 | F | 4 | ECE 317
Statistical Digital Signal Processing | ECE 418 | Sp | 3 | ECE 317 and ECE 341
Introduction to Antennas and Wireless Propagation | ECE 421 | F | 3 | ECE 225 and ECE 322
Electromagnetic Compatibility | ECE 423 | Sp | 4 | Math 310 and ECE 322
RF and Microwave Guided Propagation | ECE 424 | F | 4 | ECE 225 and ECE 322
Modern Linear Optics | ECE 427 | F | 3 | ECE 310 and ECE 322
Analog Communication Circuits | ECE 431 | F | 4 | ECE 311 and ECE 340
Digital Communications | ECE 432 | F | 3 | MATH 310, ECE 311 and ECE 341
Multimedia Systems | ECE 434 | F | 3 | ECE 310
Computer Communication Networks II | ECE 436 | Sp | 3 | ECE 333
Wireless Communications | ECE 437 | Sp | 3 | ECE 311 and ECE 341
Nanoelectronics | ECE 440 | F | 3 | ECE 346; or consent of the instructor
Power Semiconductor Devices & Integ. Circuits | ECE 442 | Sp | 4 | ECE 346
Analysis & Design of Power Electronic Circuits | ECE 445 | F | 4 | ECE 342
Technical Electives Continued on Other Side
### Technical Electives Continued Below

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Number</th>
<th>Hours</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transistors</td>
<td>ECE 448</td>
<td>3</td>
<td>ECE 346; or consent of the instructor</td>
</tr>
<tr>
<td>Microdevices and Micromachining Technology</td>
<td>ECE 449</td>
<td>4</td>
<td>ECE 347; or consent of the instructor</td>
</tr>
<tr>
<td>Control Engineering</td>
<td>ECE 451</td>
<td>3</td>
<td>ECE 350</td>
</tr>
<tr>
<td>Robotics: Algorithms and Control</td>
<td>ECE 452</td>
<td>3</td>
<td>Grade of C or better in ECE 310; and MATH 310</td>
</tr>
<tr>
<td>Electromechanical Energy Conversion</td>
<td>ECE 458</td>
<td>3</td>
<td>Grade of C or better in ECE 225</td>
</tr>
<tr>
<td>Digital Systems Design</td>
<td>ECE 465</td>
<td>F,Sp 3</td>
<td>Gr. of C or better in PHYS 142; and Gr. of C or better in ECE 265</td>
</tr>
<tr>
<td>Advanced Computer Architecture</td>
<td>ECE 466</td>
<td>F,Sp 3</td>
<td>ECE 366</td>
</tr>
<tr>
<td>Introduction to VLSI Design</td>
<td>ECE 467</td>
<td>F,Sp 4</td>
<td>ECE 340</td>
</tr>
<tr>
<td>Analog and Mixed-Signal Integrated Circuits</td>
<td>ECE 468</td>
<td>Sp 4</td>
<td>ECE 467</td>
</tr>
<tr>
<td>Hardware Description Language &amp; Datapath Design</td>
<td>ECE 469</td>
<td>Sp 3</td>
<td>CS107; and ECE 465</td>
</tr>
<tr>
<td>Computer Systems</td>
<td>CS 361</td>
<td>3</td>
<td>(CS 211+CS 261 + CS 251) or (CS 107+CS 201) or (CS 107+CS 151+CS 251)</td>
</tr>
<tr>
<td>Computer Algorithms I</td>
<td>CS 401</td>
<td>3</td>
<td>Grade of C or better in MCS 360; or Grade of C or better in CS 202</td>
</tr>
<tr>
<td>Fundamentals of Modern Quantum Theory</td>
<td>PHYS 240</td>
<td>3</td>
<td>C or better in MATH 181; and C or better in PHYS 142 or B or better in PHYS 107</td>
</tr>
<tr>
<td>Coding and Cryptography</td>
<td>MCS 425</td>
<td>3</td>
<td>Gr. of C or better in MATH 215; Gr. of C or better in MATH 310 or Gr. of C or better in MATH 320; or cons. of instr.</td>
</tr>
<tr>
<td>Numerical Analysis</td>
<td>MCS 471</td>
<td>3</td>
<td>Gr. of C or better in MCS 275 or Gr. of C or better in CS 102 or Gr. of C or better in CS 108 or consent of instructor.</td>
</tr>
<tr>
<td>Linear and Non-Linear Programming</td>
<td>STAT 471</td>
<td>3</td>
<td>Grade of C or better in MATH 310</td>
</tr>
</tbody>
</table>

### NONENGINEERING AND GENERAL EDUCATION REQUIREMENTS (53 hrs)

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Number</th>
<th>Hours</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Chemistry I Lecture*c</td>
<td>CHEM 122</td>
<td>4</td>
<td>Grade of C or better in CHEM 101 or adequate performance on the UIC Chemistry placement examination; and concurrent registration or Grade of C or better in CHEM 123</td>
</tr>
<tr>
<td>General Chemistry I Laboratory*b,;c</td>
<td>CHEM 123</td>
<td>1</td>
<td>Gr. of C or better in CHEM 101; and concurrent registration or Grade of C or better in CHEM 122</td>
</tr>
<tr>
<td>Academic Writing I:WAPC</td>
<td>ENGL 160</td>
<td>3</td>
<td>Performance on Dept. Placement Test</td>
</tr>
<tr>
<td>Academic Writing II:WIR</td>
<td>ENGL 161</td>
<td>3</td>
<td>ENGL 160 or the equivalent</td>
</tr>
<tr>
<td>Exploring World Cultures course*a</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Understanding the Creative Arts course*a</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Understanding the Past course*a</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Understanding the Individual and Society course*a</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Understanding US Society course*a</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Calculus I*b</td>
<td>MATH 180</td>
<td>4</td>
<td>C or better in MATH 121 or app. perf. on the dept. pl. test</td>
</tr>
<tr>
<td>Calculus II*b</td>
<td>MATH 181</td>
<td>4</td>
<td>C or better in MATH 180</td>
</tr>
<tr>
<td>Calculus III*b</td>
<td>MATH 210</td>
<td>3</td>
<td>C or better in MATH 181</td>
</tr>
<tr>
<td>Introduction to Differential Equations I</td>
<td>MATH 220</td>
<td>3</td>
<td>C or better in MATH 210</td>
</tr>
<tr>
<td>Applied Linear Algebra</td>
<td>MATH 310</td>
<td>3</td>
<td>&quot;C&quot; or better in MATH 181</td>
</tr>
<tr>
<td>General Physics I (Mechanics)*b</td>
<td>PHYS 141</td>
<td>4</td>
<td>C or better or concurrent registration in MATH 180; or approval of the dept; and C or better in PHYS 100 or adequate performance on the departmental placement test.</td>
</tr>
<tr>
<td>General Physics II (Electricity &amp; Magnetism)*b</td>
<td>PHYS 142</td>
<td>4</td>
<td>Gr. of C or better in MATH 181; and Gr. of C or better in PHYS 141 or consent of the instructor</td>
</tr>
<tr>
<td>Introduction to Thermal Physics</td>
<td>PHYS 260</td>
<td>2</td>
<td>Grade of C or better in MATH 181; and Grade of C or better in PHYS 142; or Grade of B or better in PHYS 107.</td>
</tr>
<tr>
<td>Recommended background: Credit or concurrent registration in MATH 220</td>
<td></td>
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</tr>
</tbody>
</table>

*a-Consult General Education section of the catalog for approved courses in this category;*b-Course approved for the Analyzing the Natural World General Education category. "c-General Education credit is given for successful completion of both CHEM 122 and CHEM 123.
UIC Electrical Engineering Curriculum - Suggested Schedule of Courses

Year 1
Sem 1
(16 hours)
- CHEM 122
- CHEM 123
  (4+1=5)
- ECE 115
  (4)
- MATH 180
  (4)
- ENGL 160
  (3)
- ENGR 100
  (0)

Sem 2
(18 hours)
- CS 107
  (4)
- PHYS 141
  (4)
- MATH 181
  (4)
- ENGL 161
  (3)
- Gen. Ed. Elective
  (3)

Year 2
Sem 1
(17 hours)
- ECE 265
  (4)
- PHYS 142
  (4)
- MATH 210
  (3)
- Gen. Ed. Elective
  (3)

Sem 2
(17 hours)
- ECE 266
  (4)
- ECE 225
  (4)
- MATH 220
  (3)
- ECE 341
  (3)

Year 3
Sem 1
(16 hours)
- ECE 322
  (4)
- ECE 340
  (4)
- ECE 310
  (3)
- Gen. Ed. Elective
  (3)

Sem 2
(17 hours)
- ECE 317
  (4)
- ECE 342
  (4)
- ECE 311
  (4)
- ECE 396
  (2)

Year 4
Sem 1
(15-17 hours)
- Tech. Elective
  (3-4)
- ECE 397
  (2)

Sem 2
(11-14 hours)
- Tech. Elective
  (3-4)
- Tech. Elective
  (3-4)
- Tech. Elective
  (3-4)
- Gen. Ed. Elective
  (3)
- Gen. Ed. Elective
  (3)

03.31.2017 Natasha Devroye