## REQUIRED COURSES WITHIN THE ENGINEERING COLLEGE (75 hrs)

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

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

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

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Number</th>
<th>Hrs</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Electromagnetics and Applications</td>
<td>ECE 322</td>
<td>4</td>
<td>ECE 225</td>
</tr>
<tr>
<td>Solid-State Device Theory</td>
<td>ECE 346</td>
<td>4</td>
<td>MATH 220, grade of O or better in ECE 115, and a grade of O or better in PHYS 124</td>
</tr>
<tr>
<td>Introduction to Analog and Digital Communications</td>
<td>ECE 311</td>
<td>4</td>
<td>Grade of O or better in ECE 310; and grade of O or better in ECE 341</td>
</tr>
<tr>
<td>Digital Signal Processing I</td>
<td>ECE 317</td>
<td>4</td>
<td>Grade of O or better in ECE 310</td>
</tr>
<tr>
<td>Electronics II</td>
<td>ECE 342</td>
<td>4</td>
<td>ECE 340</td>
</tr>
<tr>
<td>Principles of Automatic Control</td>
<td>ECE 350</td>
<td>4</td>
<td>MATH 310; and grade of O or better in ECE 310</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Number</th>
<th>Hrs</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Communication Networks I</td>
<td>ECE 333</td>
<td>4</td>
<td>CS 107; and ECE 341</td>
</tr>
<tr>
<td>Integrated Circuit Engineering</td>
<td>ECE 347</td>
<td>3</td>
<td>CHEM 122/123 and grade of O or better in ECE 225</td>
</tr>
<tr>
<td>Computer Organization</td>
<td>ECE 366</td>
<td>3</td>
<td>ECE 266; and credit or concurrent registration in CS 251</td>
</tr>
<tr>
<td>Pattern Recognition I</td>
<td>ECE 407</td>
<td>3</td>
<td>MATH 220</td>
</tr>
<tr>
<td>Network Analysis</td>
<td>ECE 410</td>
<td>3</td>
<td>MATH 310 and grade of O or better in ECE 310</td>
</tr>
<tr>
<td>Introduction to Filter Synthesis</td>
<td>ECE 412</td>
<td>3</td>
<td>Grade of O or better in ECE 310</td>
</tr>
<tr>
<td>Image Analysis and Computer Vision I</td>
<td>ECE 415</td>
<td>4</td>
<td>MATH 310; or grade of O or better in ECE 310</td>
</tr>
<tr>
<td>Digital Signal Processing II</td>
<td>ECE 417</td>
<td>4</td>
<td>ECE 317</td>
</tr>
<tr>
<td>Statistical Digital Signal Processing</td>
<td>ECE 418</td>
<td>3</td>
<td>ECE 317 and ECE 341</td>
</tr>
<tr>
<td>Introduction to Antennas and Wireless Propagation</td>
<td>ECE 421</td>
<td>4</td>
<td>ECE 225 and ECE 322</td>
</tr>
<tr>
<td>Electromagnetic Compatibility</td>
<td>ECE 423</td>
<td>3</td>
<td>Math 310 and ECE 322</td>
</tr>
<tr>
<td>RF and Microwave Guided Propagation</td>
<td>ECE 424</td>
<td>4</td>
<td>ECE 225 and ECE 322</td>
</tr>
<tr>
<td>Modern Linear Optics</td>
<td>ECE 427</td>
<td>4</td>
<td>ECE 310 and ECE 322</td>
</tr>
<tr>
<td>Analog Communication Circuits</td>
<td>ECE 431</td>
<td>4</td>
<td>ECE 311 and ECE 340</td>
</tr>
<tr>
<td>Digital Communications</td>
<td>ECE 432</td>
<td>3</td>
<td>MATH 310, ECE 311 and ECE 341</td>
</tr>
<tr>
<td>Multimedia Systems</td>
<td>ECE 434</td>
<td>4</td>
<td>ECE 310</td>
</tr>
<tr>
<td>Computer Communication Networks II</td>
<td>ECE 436</td>
<td>4</td>
<td>ECE 333</td>
</tr>
<tr>
<td>Wireless Communications</td>
<td>ECE 437</td>
<td>3</td>
<td>ECE 311 and ECE 341</td>
</tr>
<tr>
<td>Nanoelectronics</td>
<td>ECE 440</td>
<td>3</td>
<td>ECE 346; or consent of the instructor</td>
</tr>
<tr>
<td>Power Semiconductor Devices &amp; Integrated Circuits</td>
<td>ECE 442</td>
<td>4</td>
<td>ECE 346</td>
</tr>
<tr>
<td>Analysis &amp; Design of Power Electronic Circuits</td>
<td>ECE 445</td>
<td>4</td>
<td>ECE 342</td>
</tr>
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</table>

Technical Electives Continued on Other Side
Technical Electives Continued Below

<table>
<thead>
<tr>
<th>COURSE TITLE</th>
<th>NUMBER</th>
<th>HR</th>
<th>PREREQUISITES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transistors</td>
<td>ECE 448</td>
<td>3</td>
<td>ECE 346</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 456</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>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>3</td>
<td>ECE 366</td>
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<tr>
<td>Introduction to VLSI Design</td>
<td>ECE 467</td>
<td>3</td>
<td>ECE 340</td>
</tr>
<tr>
<td>Analog and Mixed-Signal Integrated Circuits</td>
<td>ECE 468</td>
<td>3</td>
<td>ECE 467</td>
</tr>
<tr>
<td>Hardware Descrip Language Modeling &amp; Datapath Design</td>
<td>ECE 469</td>
<td>3</td>
<td>CS107; and ECE 465</td>
</tr>
</tbody>
</table>
| Computer Systems                                  | CS 361  | 3  | Grade of C or better in PHYS 142; and Gr. of C or better in MATH 310; or cons. of instr.
| Computer Algorithms I                             | CS 401  | 3  | Grade of C or better in MCS 360; or Grade of C or better in CS 202               |
| Fundamentals of Modern Quantum Theory             | PHYS 240 | 3  | C or better in PHYS 142 or B or better in PHYS 107                               |
| Coding and Cryptography                           | MCS 425 | 3  | Gr. of C or better in PHYS 142; and Gr. of C or better in PHYS 107               |
| Numerical Analysis                                | MCS 471 | 3  | Grade of C or better in PHYS 142; and Gr. of C or better in PHYS 107             |
| Linear and Non-Linear Programming                 | STAT 471 | 3  | Grade of C or better in MATH 310                                                |

NONENGINEERING AND GENERAL EDUCATION REQUIREMENTS (53 hrs)

<table>
<thead>
<tr>
<th>COURSE TITLE</th>
<th>NUMBER</th>
<th>HR</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>Grade 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></td>
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</tr>
<tr>
<td>Understanding the Creative Arts course*a</td>
<td></td>
<td></td>
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<tr>
<td>Understanding the Past course*a</td>
<td></td>
<td></td>
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<tr>
<td>Understanding the Individual and Society course*a</td>
<td></td>
<td></td>
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<tr>
<td>Understanding US Society course*a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculus I*</td>
<td>MATH 180</td>
<td>4</td>
<td>Grade of C or better in MATH 121 or app. perf. on the dept. pl. test</td>
</tr>
<tr>
<td>Calculus II*</td>
<td>MATH 181</td>
<td>4</td>
<td>Grade of C or better in MATH 180</td>
</tr>
<tr>
<td>Calculus III*</td>
<td>MATH 210</td>
<td>3</td>
<td>Grade of C or better in MATH 181</td>
</tr>
<tr>
<td>Introduction to Differential Equations I</td>
<td>MATH 220</td>
<td>3</td>
<td>Grade of C or better in MATH 210</td>
</tr>
<tr>
<td>Applied Linear Algebra</td>
<td>MATH 310</td>
<td>3</td>
<td>Grade of C or better in MATH 181</td>
</tr>
<tr>
<td>General Physics I (Mechanics)*b</td>
<td>PHYS 141</td>
<td>4</td>
<td>Grade of C or better or concurrent registration in MATH 180; or approval of the dept;</td>
</tr>
<tr>
<td>General Physics II (Electricity &amp; Magnetism)*b</td>
<td>PHYS 142</td>
<td>4</td>
<td>and C or better in PHYS 100 or adequate performance on the departmental placement test.</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>
</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 Edcuition credit is given for successful completion of both CHEM 122 and CHEM 123.
UIC Electrical Engineering Curriculum - Suggested Schedule of Courses

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sem 1</td>
<td>Sem 2</td>
<td>Sem 1</td>
<td>Sem 2</td>
<td>Sem 1</td>
<td>Sem 2</td>
<td>Sem 1</td>
<td>Sem 2</td>
</tr>
<tr>
<td>(16 hours)</td>
<td>(18 hours)</td>
<td>(17 hours)</td>
<td>(17 hours)</td>
<td>(16 hours)</td>
<td>(17 hours)</td>
<td>(15-17 hours)</td>
<td>(11-14 hours)</td>
</tr>
</tbody>
</table>

- **CHEM 122**
- **CHEM 123**
- **ECE 115**
- **MATH 180**
- **ENGL 160**
- **ENGR 100**
- **CS 107**
- **PHYS 141**
- **PHYS 142**
- **MATH 181**
- **MATH 210**
- **PHYS 141**
- **MATH 210**
- **MATH 220**
- **ECE 265**
- **ECE 225**
- **ECE 266**
- **ECE 322**
- **ECE 340**
- **ECE 342**
- **ECE 317**
- **ECE 346**
- **ECE 341**
- **ECE 310**
- **ECE 311**
- **MATH 310**
- **ECE 396**
- **ECE 397**
- **ECE 499**

- **Gen. Ed.**
- **Elective**

- **Grade C or better pre-requisite**
- **pre-requisite**
- **co-requisite**

03.31.2017 Natasha Devroye