### Electrical and Computer Engineering

**ECE 498  Special Topics in ECE**  credit: 0 TO 4 hours.

Subject offerings of new and developing areas of knowledge in electrical and computer engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. 0 to 4 undergraduate hours. 0 to 4 graduate hours. May be repeated in the same or separate terms if topics vary.

<table>
<thead>
<tr>
<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
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<td>70806</td>
<td>Lecture</td>
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<td>02:00 PM - 03:20 PM</td>
<td>TR</td>
<td>2013 - Electrical &amp; Computer Eng Bldg</td>
<td>Miller, A</td>
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<td>Miller, A</td>
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<td>TR</td>
<td>2015 - Electrical &amp; Computer Eng Bldg</td>
<td>Levchenko, K</td>
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Credit Hours: 3 hours  
**Applied Cryptography**  
Restricted to students with Senior or Graduate class standing.  
Prerequisites: ECE 422 / CS 461 or equivalent, or ECE 428 / CS 425 or equivalent. Cryptography is a powerful toolbox for building secure systems - not just for private communication, but also for building fault tolerant protocols, for securely outsourcing computation to untrusted services, and more. The goal of this course is to introduce the concepts of modern cryptography, including a combination of theoretical foundations (how do we precisely state security guarantees and assumptions, and prove that a protocol is designed correctly?) and practical techniques (how do we combine secure primitives to make effective systems?). This course is intended for senior undergraduate students with an interest in applying cryptographic techniques to building secure systems, and for graduate students with an interest in cryptography or systems security.

Credit Hours: 4 hours  
**Applied Cryptography**  
Restricted to students with Senior or Graduate class standing.  
Prerequisites: ECE 422 / CS 461 or equivalent, or ECE 428 / CS 425 or equivalent. Cryptography is a powerful toolbox for building secure systems - not just for private communication, but also for building fault tolerant protocols, for securely outsourcing computation to untrusted services, and more. The goal of this course is to introduce the concepts of modern cryptography, including a combination of theoretical foundations (how do we precisely state security guarantees and assumptions, and prove that a protocol is designed correctly?) and practical techniques (how do we combine secure primitives to make effective systems?). This course is intended for senior undergraduate students with an interest in applying cryptographic techniques to building secure systems, and for graduate students with an interest in cryptography or systems security.

Credit Hours: 2 hours  
**eCrime & Internet Serv Abuse**  
Many of the computer systems we use today have design and implementation vulnerabilities that can be exploited for illicit financial gain. This course will cover the techniques profit-motivated miscreants use to compromise and abuse computer systems. Through a series of hands-on machine problems, the course will introduce students to malware, spam, account compromise, and “black hat” search engine optimization.