Interdisciplinary Ph. D. Program in Information Security

In addition to the courses listed in the requirement areas, the various departments and programs occasionally offer new courses and courses on specific topics that may meet area requirements, especially when they are taught by CERIAS principals and fellows. These include TECH 621 (when taught by Prof. Dark), CNIT 623 and 499 (Prof. Taylor), CNIT 581, LING 689 (Prof. Raskin), some CS 590 offerings, and others. The INSC program administration will announce such courses when they are available, but students are welcome to ask about any courses that might not be otherwise listed.

### Area A. Required courses (8)

**Four technical courses:**
- CS 52600 Information Security or CNIT 55500 Advanced Network Security
- CS 55500 Cryptography
- CS 62600 Advanced Information Assurance
- CS 65500 Advanced Cryptology—or equivalents

**Two philosophical/ethical courses:**
- PHIL 52400 Contemporary Ethical Theory and PHIL 58000† Proseminar in Philosophy—or equivalents; e.g. TECH 62100 Information Assurance Ethics

**Two political/social courses:**
- POL 62000† Proseminar in Public Policy and TECH 62100 Technology and Policy

### Area B. Recommended courses

Any six courses not taken in Area A:

--- For SFS Students, one of these must be *Applied Research Problems in National Information Security* TECH 58100

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>AGEC 60800</td>
<td>Benefit-Cost Analysis</td>
</tr>
<tr>
<td>69100†</td>
<td>Research in Agricultural Economics</td>
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<tr>
<td>ARM 59100†</td>
<td>Foundations in Homeland Security</td>
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<tr>
<td>AT 53200</td>
<td>Contemporary Issues in Transportation Sec</td>
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<tr>
<td>CNIT 42100</td>
<td>Small Scale Digital Device Forensics</td>
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<tr>
<td>45500</td>
<td>Network Security</td>
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<tr>
<td>45600</td>
<td>Wireless Network Security &amp; Management</td>
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<tr>
<td>49900†</td>
<td>Topics In Computer And Information Technology</td>
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<tr>
<td>51100</td>
<td>Foundations in Homeland Security</td>
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<tr>
<td>51200</td>
<td>Managing Resources and Applications for Homeland Security</td>
</tr>
<tr>
<td>55600</td>
<td>Basic Computer Forensics</td>
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<td>55700</td>
<td>Advanced Cyberforensics</td>
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<tr>
<td>55800</td>
<td>Bioinformatics Computing And Systems</td>
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<tr>
<td>58100†</td>
<td>Workshop In Computer Technology</td>
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<tr>
<td>62300†</td>
<td>Contemporary Computer Tech Problems</td>
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<td>62400†</td>
<td>Research Methods for Computing</td>
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<tr>
<td>COM 51200</td>
<td>Theories Of Interpersonal Communication</td>
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<td>51800</td>
<td>Theories Of Persuasion</td>
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<tr>
<td>55800</td>
<td>Historical Trends In Mass Communication Research</td>
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<tr>
<td>55900</td>
<td>Current Trends In Mass Communication Research</td>
</tr>
<tr>
<td>57400</td>
<td>Organizational Communication</td>
</tr>
<tr>
<td>59000†</td>
<td>Directed Study of Special Problems</td>
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54000  Biometric Performance and Usability Analysis
54500  Biometrics Technology And Applications
58100† Biometric Data Analysis

LING 50000 Introduction to Linguistics
52100  Syntax I: Syntactic Analysis
53100  Semantics I: Lexical and Sentential Semantics

MGMT 68900† Natural Language Process (ECE 66900)
59000† Directed Readings in Management Design: Soc Networks & Engmts

OBHR 68100† Managing Behavior in Organizations
68300  Individual Behavior in Organizations

PHIL 52400* Contemporary Ethical Theory

* Unless taken under Area A
§ Note: May take one or the other of the following but not both:

CS 53600 or MGMT 54700
PSY 57700 or IE 57700

**Area C. Elective Courses
Any four courses:

CNIT 62300 Research Methods for Computing (replaces TECH 64600 Fall 2013)
**COM 59000F Communication Theory
60000  Foundations Of Human Communication Inquiry I
60100  Foundations Of Human Communication Inquiry II
61000† Seminar: Special Topics in Rhetorical Studies
63200† Special Topics In Mass Communication
67400† Seminar: Special Topics In Organizational Communication
67600† Seminar: Special Topics in Health Communication
CS 50200 Compiling and Programming Systems
54100  Database Systems
54200  Distributed Database Systems
57300  Data Mining
ECE 54400 Digital Communications
56200  Introduction to Data Management
56500  Computer Architecture
57000  Artificial Intelligence
57300  Compilers And Translator Writing Systems

ECET 58100† Selected Topics in Sensors
EDPS 53300 Introduction to Educational Research I: Methodology
ENE 69500  Advanced Topics in Engineering Education

Any course from Area B above, not taken to satisfy Area B requirement, can be taken in Area C.

Courses from at least five different graduate programs should be taken among Areas A, B, and C. Five graduate courses must constitute a declared and approved meaningful sub-concentration.

† When content is appropriate If Course Title Relevant
**Note that COM 59000F and 59000G as well as COM 60000 and 60100 are restricted to only COM Ph.D. students.

Last Revised Date: 1/11/16
Specific departmental requirements

- Students graduating via the Department of Communication must satisfy that department's requirements for the Masters' degree in Information Security, take COM 60000 and COM 60100 and make sure that they earn a minimum of 12 graduate credits in Communication;
- Students graduating via Technology must satisfy that department's requirements for the Masters' degree in Information Security;
- Students graduating via Linguistics must take LING 53100 and LING 68900: Natural Language Processing.