# Cybersecurity

120 credit hours total

| YEAR 1 FALL | YEAR 1 SPRING | YEAR 2 FALL | YEAR 2 SPRING | YEAR 3 FALL | YEAR 3 SPRING | YEAR 4 FALL | YEAR 4 SPRING |
|---|---|---|---|---|---|---|---|
| *MATH 220 (4)<br>Analytic Geometry and Calculus I<br>KSC-3 | MATH 221 (4)<br>Analytic Geometry and Calculus II<br>PR: MATH 220 ≥C | CIS 300 (3)<br>Data and Program Structures<br>PR: CIS 200 ≥ C | MATH 510 (3)<br>Discrete Mathematics<br>PR: MATH 221 | CIS 308 (1)<br>C Language Laboratory<br>PR: CIS 300 ≥ C | CRIM 550 (3)<br>Technocrime, Security and Society<br>PR: SOCIO 211 | CIS 551 (3)<br>Fundamentals of Computer and Information Security<br>PR: CIS 450 or 520 ≥ C | CIS 599 (3)<br>Cybersecurity Project<br>PR: CIS 415, CIS 501, CIS 560, CIS 551 ≥ C, SR standing |
| CIS 115 (2)<br>Introduction to Computing Science<br>PR/CO: CIS 116 | CIS 200 (4)<br>Programming Fundamentals<br>PR: CIS 116 ≥ C<br>PR/CO: MATH 205 or 220 ≥ C | CIS 301 (3)<br>Logical Foundations of Programming<br>PR: CIS 200 ≥ C | CIS 400 (3)<br>Object-Oriented Design, Implementation and Testing<br>PR: CIS 300 ≥ C | CIS 501 (3)<br>Software Architecture and Design<br>PR: CIS 400 ≥ C | CIS 450 (3)<br>Computer Architecture and Operations<br>PR: ECE 241 ≥ C<br>PR/CO: CIS 308 | CIS 525 (3)<br>Introduction to Network Programming<br>PR: CIS 300, 308 ≥C | CIS 655 (3)<br>Security and Reliability of Computing Systems<br>PR: CIS 450 OR ECE 441 ≥C |
| | | | | | | | OR |
| CIS 116 (1)<br>Introduction to Programming | ECE 241 (3)<br>Introduction to Electrical and Computer Engineering | *ENGL 200 (3)<br>Expository Writing II<br>KSC-1<br>PR: ENGL 100 | CIS 415 (3)<br>Ethics and Conduct for Computing Professionals<br>PR: CIS 300 ≥ C | CIS 505 (3)<br>Introduction to Programming Languages<br>PR: CIS 400 ≥ C | CIS 553 (3)<br>Fundamentals of Cryptography<br>PR: CIS 300 ≥ C, MATH 510 ≥ C | CIS 560 (3)<br>Database System Concepts<br>PR: CIS 300,301 ≥ C<br>PR/CO: MATH 510 | CIS 755 (3)<br>Systems Security<br>PR: CIS 551 or 751 ≥ C |
| *ENGL 100 (3)<br>Expository Writing I<br>KSC-1 | PHYS 113 (4)<br>General Physics I | PHYS 114 (4)<br>General Physics II<br>PR: PHYS 113 | *SOCIO 211 (3)<br>Introduction to Sociology<br>KSC-5 | *Elective (3)<br>Social and Behavioral Sciences<br>KSC-5 | CIS 575 (3)<br>Introduction to Algorithm Analysis<br>PR: CIS 300/301 ≥ C, MATH 510 ≥ C | ▲Elective (3)<br>Math | ▲Elective (3-4)<br>Unrestricted |
| | OR | OR | | | | | |
| *COMM 106 (3)<br>Public Speaking<br>KSC-2 | PHYS 213 (5)<br>Engineering Physics I<br>PR/CO: MATH 220 | PHYS 214 (5)<br>Engineering Physics II<br>PR: PHYS 213<br>PR/CO: MATH 221 | *Elective (3)<br>Institutional<br>KSC-7 | *Elective (3)<br>Arts and Humanities<br>KSC-6 | ENGL 415 (3)<br>Written Communication for Engineers<br>PR: ENGL 200 | *Elective (3)<br>Institutional<br>KSC-7 | *Elective (4-5)<br>Natural and Physical Sciences<br>KSC-4 |
| | OR | OR | | | OR | | |
| *Elective (3)<br>Arts and Humanities<br>KSC-6 | PHYS 223 (5)<br>Physics I, Mechanics and Thermodynamics<br>PR/CO: MATH 220 | PHYS 224 (5)<br>Physics II, Electromagnetism and Sound<br>PR: PHYS 223<br>PR/CO: MATH 221 | | STAT 510 (3)<br>Introductory Probability and Statistics I<br>PR: MATH 221 | ENGL 516 (3)<br>Communication for the Sciences<br>PR: ENGL 200 | | |
| CIS 015 (0) | CIS 018 (0) | CIS 018 (0) | CIS 018 (0) | CIS 018 (0) | CIS 018 (0) | CIS 018 (0) | CIS 018 (0) |
| (16 credit hours) | (15-16 credit hours) | (13-14 credit hours) | (15 credit hours) | (16 credit hours) | (15 credit hours) | (15 credit hours) | (13-15 credit hours) |

KANSAS STATE UNIVERSITY | Carl R. Ice College of Engineering

**KEY**

- ◪ = Prerequisite for another course
- PR = Prerequisite requirement
- PR/CO = Prerequisite or concurrent requirement
- * = K-State Core (KSC) course
- ▲ = See department approved electives
- ● = Only offered in the semester shown

*Degree map is for advising purposes only. Students are responsible for complying with University Catalog requirements.*

# Cybersecurity Curriculum Notes

To graduate with a B.S. in cybersecurity, students must have at least a 2.3 GPA in all classes at the 400 level or above taken for undergraduate credit from the Carl R. Ice College of Engineering at Kansas State University. Course grades that have been removed by the K-State Retake policy will not apply to this GPA calculation.

All students new to the CS department must complete CIS 015.

Additional information is available at **cs.k-state.edu/academics/undergraduate/cybersecurity**.

## Electives

The Math elective must have departmental approval.

Students who satisfy all or part of K-State Core Natural and Physical Sciences electives (Requirement #4) and/or Institutional Electives (Requirement #7) with courses that satisfy other degree requirements may use additional unrestricted electives to meet the degree requirement of 120 credit hours.

## Communications Overlay

All students must complete at least two courses (6 hours), which may be used as unrestricted electives or, where applicable, K-State Core requirements, from the following list:

- Any K-State Core Communications course (KSC-2) (3)
- COMM 323 Nonverbal Communication (3)
- COMM 326 Group Communication (3)
- MANGT 220 Principles of Management (3)
- THTRE 261 Fundamentals of Acting (3)
- THTRE 265 Fundamentals of Improvisation I, II (3)

## K-State Core

The K-State Core (KSC) is the university's version of the systemwide general education framework established by the Kansas Board of Regents.

**KSC requirement 1** – English (6 hours)
**KSC requirement 2** – Communications (3 hours)
**KSC requirement 3** – Math and Statistics (3 hours)
**KSC requirement 4** – Natural and Physical Sciences (4-5 hours)
**KSC requirement 5*** – Social and Behavioral Sciences (6 hours)
**KSC requirement 6*** – Arts and Humanities (6 hours)
**KSC requirement 7** – Institutional Electives (6 hours)

To view course lists for each requirement, visit **k-state.edu/provost/kstate-core**.

**Requires two courses from two different subject areas.*