

# Cybersecurity (120 Hours)

Effective F2022

## Freshman

## Sophomore

## Junior

## Senior

CIS 115 (3) Intro. Comp. Sci	CIS 200 (4) Programming Fund.  PR: CIS 115 or ECE 241 PR/CO: Math 205 or 220	CIS 300 (3) Data & Program Structures  PR: CIS 200 PR: Math 205 or 220	CIS 400 (3) Object-Oriented Design, Imp., & Testing  PR: CIS 300	CIS 501 (3) SW Arch. & Design  PR: CIS 400	CIS 575 (3) Intro to Alg. Analysis  PR: CIS 300 and 301 PR: Math 510	CIS 505 (3) Intro. to Programming Languages  PR: CIS 301 & 400	CIS 553 (3)/ Fund. Crypto  PR: CIS 300 & Math 510
Math 220 (4) Calculus I	CIS 221 (4) Calculus II  PR: Math 220	CIS 301 (3) Log. Found of Prog.  PR: CIS 200	CIS 308 (1) C Lang. Lab  PR: CIS 300	CIS 415 (3) Ethics & Conduct  PR: CIS 300	CIS 450 (3) Comp. Arch & Ops  PR: ECE 241 PR: CIS 308	CIS 551 (3) Fund. of Computer & Info Security  PR: CIS 450	CIS 599 (3)/ Cybersecurity Project  PR: CIS 551
ENGL 100 (3) Writing 1	ECE 241 (3) Intro. Com. Engg.	ENGL 200 (3) Writing 2  PR: ENGL 100	Math 510 (3) Discrete Math  PR: Math 221	Communications Elective	CIS 560 (3) Database System  PR: CIS 300, 301 PR/CO: Math 312 or 510	CIS 525 (3) Intro Comp. Network  PR: CIS 300 & 308	Unrestricted Elective (3)
ECON 110 (3) Princ. of Mac. Econ	1 Natural Science Choose Seq. 1 out of 2	2 Natural Science Choose Seq. 2 out of 2	1 Math/ Natural Sci. Elective  * 300 Level & above	Unrestricted Elective (3/4)	STAT 510 (3) Intro. to Prob. & Stats  PR: Math 221	2 Math/ Natural Sci. Elective	3 Math Elective
COMM 105 (2)/ COMM 106 (3) Public Speaking		Human/Soc.Sci. Elective (3)	SOCIO 211 (3) Intro. to Sociology	CRIM 550 (3) Technocrime, Security & Society	ENGL 516 (3)/ ENGL 415 (3) Writing Comm. for Sci/Engg.  PR: ENGL 200	CIS 655 (3) Sec. & Reliab. Comp. Sys/ CIS 755 Sts. Sec.  CIS 655 PR: CIS 450 CIS 755 PR: CIS 551	Human/Soc.Sci. Elective (3)
CIS 015 (0) Undergrad Seminar	CIS 018 (0) Professional Development Seminar	CIS 018 (0) Professional Development Seminar	CIS 018 (0) Professional Development Seminar	CIS 018 (0) Professional Development Seminar	CIS 018 (0) Professional Development Seminar	CIS 018 (0) Professional Development Seminar	CIS 018 (0) Professional Development Seminar

This course is part of the Pre-Professional Program

This course is part of the Prof. Program  
\* 018 required every sem.

Advisor: \_\_\_\_\_

Student ID: \_\_\_\_\_

# Rules for Mathematics, Science, and Electives

## Math/Science Electives

- 1** **2** All remaining hours, choose from the following:
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| BIOCH 625 Intro.Organic & Biochemistry (5)   | MATH 222 Analytic Geo. and Calculus III (4)            |
| BIOCH 521 General Biochemistry (3)           | MATH 340 Elementary Diff. Equations (4)                |
| BIOL 198 Principles of Biology (4)           | MATH 506 Introduction to Nmbr Theory (3)               |
| BIOL 201 Organismic Biology (5)              | MATH 511 Introduction to Algebraic Sys. (3)            |
| BIOL 450 Modern Genetics (4)                 | MATH 512 Introduction to Modern Alg. (3)               |
| BIOL 455 General Microbiology (4)            | MATH 515 Introduction to Linear Alg. (3)               |
| CHM 210 Chemistry I (4)                      | MATH 551 Applied Matrix Theory (3)                     |
| CHM 230 Chemistry II (4)                     | MATH 572 Foundations of Geometry (3)                   |
| CHM 350 General Organic Chemistry (3)        | MATH 633 Advanced Calculus I (3)                       |
| CHM 371 Chemical Analysis (4)                | PHYS 113 General Physics (4)                           |
| CHM 531 Organic Chemistry I (3)              | PHYS 114 General Physics II (4)                        |
| CHM 550 Organic Chemistry II (3)             | PHYS 213 Engineering Physics I (5)                     |
| GEOL 100 Earth in Action (3)                 | PHYS 214 Engineering Physics II (5)                    |
| GEOL 102 Earth in Time (3)                   | PHYS 223 Physics I, Mech., & Thermodynamics (5)        |
| GEOL 103 Geology Laboratory (1)              | PHYS 224 Physics II, Electromag. & Sound (5)           |
| GEOL 502 Mineralogy (3)                      | PHYS 325 Physics III, Relativity, and Quant. Phys. (4) |
| STAT 511 Intro. Probability and Stat. II (3) |  |
- 3** One of the following math courses must be included:
- |  |  |
|--|--|
| MATH 222 Analytic Geometry and Calc. III (4) | MATH 515 Introduction to Linear Algebra (3)        |
| MATH 340 Elementary Differential Equ.s (4)   | MATH 551 Applied Matrix Theory (3)                 |
| MATH 506 Intro. to Number Theory (3)         | MATH 572 Foundations of Geometry (3)               |
| MATH 511 Intro. to Algebraic Systems (3)     | MATH 633 Advanced Calculus I (3)                   |
| MATH 512 Intro. to Modern Algebra (3)        | STAT 511 Introductory Probability and Stat. II (3) |

## BCSCY Tech Electives

- Additional Cybersecurity Courses (15 hours)
- CIS 525 Introduction to Network Programming (3 hours)  
 CIS 551 Fundamentals of Computer and Information Security (3 hours)  
 CIS 553 Fundamentals of Cryptography (3 hours)  
 CIS 599 Cybersecurity Project (3 hours)
- One of:
- CIS 655 Security and Reliability of Computing Systems (3 hours)  
 CIS 755 Systems Security (3 hours)
- Additional Tech Elective Courses (3-6 hours, depending on which capstone sequence was selected). These may be any CIS course at the 500-level or above, or any of the following:
- ECE 542 Computer Networking  
 GEOG 602 Computer Mapping and Geographic Visualization  
 MATH 615 Digital Image Processing  
 MATH 655 Elementary Numerical Analysis I  
 MATH 656 Elementary Numerical Analysis II  
 MATH 725 The Mathematics of Data and Networks I  
 MATH 726 The Mathematics of Data and Networks II  
 MIS 670 Social Media Analytics and Web Mining

## Natural Science Sequence

- 1** **2** One of the following two-semester sequences must be included:
- BIOL 198 and 401 (9 Hours)  
 CHM 210 and 230 (8 hours)  
 PHYS 213 and 214 (10 Hours)  
 PHYS 223 and 224 (10 Hours)

## Communications Elective Choices

- Options:
- COMM 322 Interpersonal Communications (9)  
 COMM 326 Small Group Discussion Methods (3)  
 MANGT 420 Principles of Management (3)  
 THTRE 261 Fundamentals of Acting (3)  
 THTRE 265 Fundamentals of Improvisation (3)

## Humanities/Social Science Electives

- Suggestions:
- ARCH 301 Appreciation of Architecture (3)  
 COMM 323 Nonverbal Communication (3)  
 ENGL 270 American Literature (3)  
 GWSS 350 Gender in American Film (3)  
 GWSS 550 Women and Popular Culture (3)  
 MUSIC 170 History of Rock and Roll (3)  
[eng.ksu.edu/docs/student-services/hss.pdf](http://eng.ksu.edu/docs/student-services/hss.pdf)