

COMPUTER AND INFORMATION SCIENCE/ CYBERSECURITY

Students with an interest in both areas can pursue a dual BS program in Computer and Information Science and Cybersecurity and thus can earn two BS degrees at the same time:

- BS degree in Computer and Information Science (Information Systems Concentration)
- BS degree in Cybersecurity and Information Assurance (Cybersecurity and Privacy or Digital Forensics Concentration)

The dual degree program requires specified coursework that equals a minimum of 138 total credits.

Dearborn Discovery Core

Please see the Dearborn Discovery Core (General Education) (<https://umdearborn.edu/dearborn-discovery-core/>) webpage or additional information.

Foundational Studies

Writing and Communication (GEWO) – 6 Credits

Upper-Level Writing Intensive (GEWI) – 3 Credits

Quantitative Thinking and Problem Solving (GEQT) – 3 Credits

Critical and Creative Thinking (GECC) – 3 Credits

Areas of Inquiry

Natural Science (GENS) – 7 Credits

- Lecture/Lab Science Course
- Additional Science Course

Social and Behavioral Analysis (GESB) – 9 Credits

Humanities and the Arts (GEHA) – 6 Credits

Intersections (GEIN) – 6 Credits

Capstone

Capstone (GECE) – 3 Credits

Major Requirements

In addition to completion of the Dearborn Discovery Core, the following courses are required to earn a dual BS degree in Computer and Information Science and Cybersecurity and Information Assurance.

Prerequisite Courses

| Code | Title | Credit Hours |
|----------|---------------------------------------------------------------------------------------|--------------|
| COMP 105 | Writing & Rhetoric I | 3 |
| COMP 270 | Tech Writing for Engineers (Fulfills 3 credits of DDC Written and Oral Communication) | 3 |
| ECON 201 | Prin: Macroeconomics (Fulfills 3 credits of DDC Social and Behavioral Analysis) | 3 |

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|--------------------------------------------------|-----------------------------------------------------------------------------------|---|
| or ECON 202 | Prin: Microeconomics | |
| CRJ 200 | Intro to Criminal Justice (Fulfills 3 credits DDC Social and Behavioral Analysis) | 3 |
| PHIL 240 | Ethics | 3 |
| Select a two course sequence from the following: | | 8 |
| BIOL 130 & BIOL 320 | Intro Org and Environ Biology and Field Biology | |
| CHEM 134 & CHEM 136 | General Chemistry IA and General Chemistry IIA | |
| GEOL 118 & GEOL 218 | Physical Geology and Historical Geology | |
| PHYS 125 & PHYS 126 | Introductory Physics I and Introductory Physics II | |
| PHYS 150 & PHYS 151 | General Physics I and General Physics II | |
| MATH 115 | Calculus I | 4 |
| MATH 116 | Calculus II | 4 |
| MATH 227 | Introduction to Linear Algebra | 3 |
| CIS 150 | Computer Science I | 4 |
| CIS 200 | Computer Science II | 4 |
| CIS 275 | Discrete Structures I | 4 |
| CIS 275 | Discrete Structures I | 4 |
| IMSE 317 | Eng Probability and Statistics | 3 |
| ACC 298 | Financial Accounting | 3 |

Dual Major in CSCI Core Courses

| Code | Title | Credit Hours |
|------------|--------------------------------|--------------|
| CIS 310 | Computer Org and Assembly Lang | 4 |
| CIS 350 | Data Struc and Algorithm Anlys | 4 |
| CIS 375 | Software Engineering I | 4 |
| CIS 421 | Database Mgmt Systems | 4 |
| CIS 427 | Comp Networks and Dis Process | 4 |
| CIS 435 | Web Technology | 3 |
| CIS 450 | Operating Systems | 4 |
| CIS 479 | Intro to Artificial Intel | 3 |
| CIS 4951 | Design Seminar I | 2 |
| CIS 4952 | Design Seminar II | 2 |
| ENGR 400 | Appl Business Tech for Engr | 3 |
| or ENT 400 | Entrepreneurial Thinking&Behav | |
| OB 354 | Behavior in Organization | 3 |

Concentration in Information Systems Courses

| Code | Title | Credit Hours |
|-------------------------------------|------------------------------|--------------|
| IMSE 3005 | Intro to Operations Research | 4 |
| CIS 425 | Information Systems | 4 |
| CIS 476 | Soft Arch & Design Patterns | 3 |
| Take one COURSE FROM the following: | | |
| CIS 296 | Java Programming | 3 |
| or CIS 297 | Intro to C Sharp | |
| or CIS 298 | Intro to Python | |

Select either the Digital Forensics Concentration OR the Cybersecurity and Privacy Concentration

| Code | Title | Credit Hours |
|--------------------------------------------------------|---------------------------------------------|--------------|
| Digital Forensics Concentration Courses | | |
| CIS 387 | Digital Forensics I | 4 |
| CIS 467 | Digital Forensics II | 4 |
| CIS 447 | Intro Computr & Ntwrk Security | 3 |
| CRJ 468 | Criminology | 3 |
| CRJ 475 | Digital Evidence | 3 |
| CRJ 487 | Forensic Science Evidence in Criminal Cases | 3 |
| CRJ 409 | Intel and Homeland Security | 3 |
| or CRJ 474 | Cyber Crimes | |
| Cybersecurity And Privacy Concentration Courses | | |
| CIS 316 | Prac. Comp. Sec. | 3 |
| CIS 446 | Wireless & Mobi Comp Security | 3 |
| CIS 447 | Intro Computr & Ntwrk Security | 3 |
| CIS 4851 | Data Security and Privacy | 3 |
| CRJ 409 | Intel and Homeland Security | 3 |
| ECE 427 | Digi Content Protec | 4 |
| or CIS 449 | Intro to Software Security | |
| MATH 396 | Introduction to Cryptography | 3 |

CSCI Electives

| Code | Title | Credit Hours |
|------------------------------------------------------------|---------------------------------------|--------------|
| Select 6-8 credits from the following: ¹ | | 6-8 |
| CIS 285 | Software Engineering Tools | 3 |
| CIS 316 | Prac. Comp. Sec. | 3 |
| CIS 376 | Software Engineering II | 4 |
| CIS 381 | Industrial Robots | 4 |
| CIS 387 | Digital Forensics I | 4 |
| CIS 411 | Natural Language Processing | 3 |
| CIS 436 | Mobile App Des & Impl | 3 |
| CIS 437 | Advanced Networking | 3 |
| CIS 439 | Text Mining and Information Retrieval | 3 |
| CIS 446 | Wireless & Mobi Comp Security | 3 |
| CIS 447 | Intro Computr & Ntwrk Security | 3 |
| CIS 449 | Intro to Software Security | 3 |
| CIS 467 | Digital Forensics II | 4 |
| CIS 487 | Computer Game Design & Implem | 3 |
| CIS 4851 | Data Security and Privacy | 3 |
| CIS 490H | Advanced Topic: Edge Computing | 3 |
| CIS 490I | Advanced Topic: Deep Learning | 3 |
| ENGR 399 | Experiential Honors Prof. Prac | 1 |
| ENGR 492 | Exper Honors Directed Research | 1 |
| ENGR 493 | Exper Hnrs Dir Dsgn | 1 |

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Select electives not used to fulfill the requirements of your concentration.