



## Computer and Information Sciences

## Major - Computer Science Cyber Operations

### Catalog Year 2020-2021 and Later

#### Required Computer Science Courses

34 Units

Units

|                |                                      |   |
|----------------|--------------------------------------|---|
| _____ CIS 377  | Intro to Cybersecurity               | 3 |
| _____ COSC 236 | Intro to Computer Science I          | 4 |
| _____ COSC 237 | Intro to Computer Science II         | 4 |
| _____ COSC 290 | Principles of Computer Organization  | 4 |
| _____ COSC 336 | Data Structures & Algorithm Analysis | 4 |
| _____ COSC 350 | Data Communications & Networking     | 3 |
| _____ COSC 412 | Software Engineering                 | 3 |
| _____ COSC 439 | Operating Systems                    | 3 |
| _____ COSC 455 | Programming Languages                | 3 |
| _____ COSC 457 | Database Management Systems          | 3 |

#### Required Science Courses

8 Units

Select 2 lab science courses from the following:

Units

|                    |                            |   |
|--------------------|----------------------------|---|
| _____ ASTR 161     | Sky and Solar System       | 4 |
| _____ ASTR 181     | Stars, Galaxies, Universe  | 4 |
| _____ BIOL 200 + L | Intro to Cell Biology      | 4 |
| _____ BIOL 206 + L | Intro to Ecology/Evolution | 4 |
| _____ CHEM 131 + L | General Chemistry          | 4 |
| _____ CHEM 132 + L | General Chemistry II       | 4 |
| _____ GEOL 121     | Physical Geology           | 4 |
| _____ PHYS 241     | General Physics I          | 4 |
| _____ PHYS 242     | General Physics II         | 4 |

#### Required Cyber Operation Track Courses

18 Units

Units

|                |                                      |   |
|----------------|--------------------------------------|---|
| _____ COSC 340 | Systems Programming                  | 3 |
| _____ COSC 440 | Operating Systems Security           | 3 |
| _____ COSC 450 | Network Security                     | 3 |
| _____ COSC 458 | Application Software Security        | 3 |
| _____ COSC 481 | Case Studies                         | 3 |
| _____ COSC 485 | Reverse Engineering/Malware Analysis | 3 |

#### Required Mathematics Courses

15-16 Units

Units

|                |                                |   |
|----------------|--------------------------------|---|
| _____ MATH 263 | Discrete Mathematics <b>OR</b> | 3 |
| _____ MATH 267 | Intro to Abstract Mathematics  | 4 |
| _____ MATH 273 | Calculus I                     | 4 |
| _____ MATH 274 | Calculus II                    | 4 |
| _____ MATH 314 | Cryptography                   | 3 |
| _____ MATH 330 | Intro to Statistical Methods   | 4 |

**Total Units: 87-88**

#### Required Core Courses

9 Units

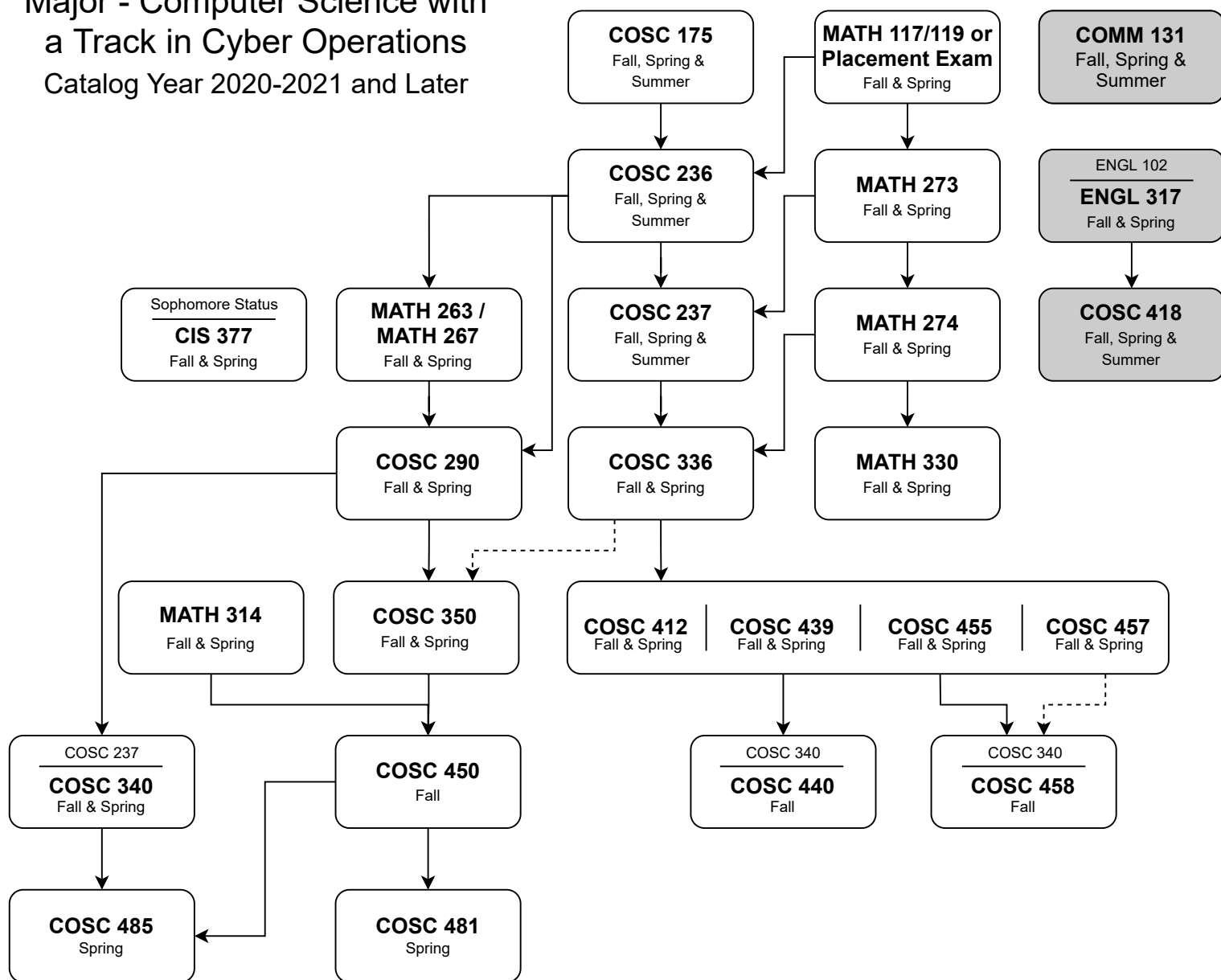
Units

|                |                                          |   |
|----------------|------------------------------------------|---|
| _____ COMM 131 | Public Speaking (Core 5)                 | 3 |
| _____ ENGL 317 | Writing for Business & Industry (Core 9) | 3 |
| _____ COSC 418 | Ethical & Societal Concerns CS (Core 14) | 3 |

**[towson.edu/cis](http://towson.edu/cis)  
[towson.edu/cyber](http://towson.edu/cyber)**

# Major - Computer Science with a Track in Cyber Operations

Catalog Year 2020-2021 and Later



## MATH Prerequisites

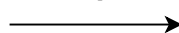
| COURSE   | PREREQUISITE                 |
|----------|------------------------------|
| MATH 263 | MATH 119, COSC 236           |
| MATH 273 | MATH 119                     |
| MATH 274 | MATH 273                     |
| MATH 314 | MATH 263, MATH 330, COSC 236 |
| MATH 330 | MATH 274                     |

Sophomore Status

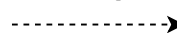
CIS 377

Course/Status listed above  
is also a prerequisite.

**Prerequisite**



**Co-Requisite**



**Find more advising resources at:**

<https://www.towson.edu/fcsm/departments/computerinfosci/resources/advising.html>

**Visit the CIS Advising Hub in YR 207**

**Or Email:** [cisadvising@towson.edu](mailto:cisadvising@towson.edu)