

Computer and Information Sciences

Major - Computer Science

Catalog Year 2026-2027 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 Programing Languages	3
_____	COSC 457 Database Management Systems	3

Required Mathematics Courses

15-16 Units

		Units
_____	MATH 263 Discrete Mathematics OR	3
_____	MATH 267 Intro to Abstract Mathematics	4
_____	MATH 273 Calculus I	4
_____	MATH 274 Calculus II	4
_____	MATH 330 Intro to Statistical Methods	4

Required Science Courses (Core 7 and 8)

8 Units

Select 2 lab science courses from the following:

		Units
_____	ASTR 261 Intro to Astrophysics	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 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

Elective Computer Science Courses

12 Units

Group A - At least 2 of the following:		Units
_____	COSC 417 Intro to Computing Theory	3
_____	COSC 432 Requirements Analysis & Modeling	3
_____	COSC 436 Object-Oriented Design & Programming	3
_____	COSC 459 Computer Simulation & Modeling	3
_____	COSC 461 Artificial Intelligence	3
_____	COSC 467 Machine Learning Data Mining	3
_____	COSC 471 Computer Graphics	3
_____	COSC 472 Computer Vision and Image Processing	3
_____	COSC 483 Design & Analysis of Algorithms	3

Group B - At least 2 of the following:

(Only one of COSC 397/COSC 495 may be used)

	Units
_____ COSC 397 Internship in COSC	3
_____ COSC 431 Special Topics	3
_____ COSC 435 Mobile App Development	3
_____ COSC 440 Operating Systems Security	3
_____ COSC 442 Software Assurance & Testing	3
_____ COSC 443 Cyber AI	3
_____ COSC 450 Network Security	3
_____ COSC 458 Application Software Security	3
_____ COSC 462 Generative AI & Large Language Models	3
_____ COSC 465 Robotics	3
_____ COSC 484 Web-Based Programming	3
_____ COSC 486 Cryptocurrencies & Blockchain	3
_____ COSC 495 Independent Study	3

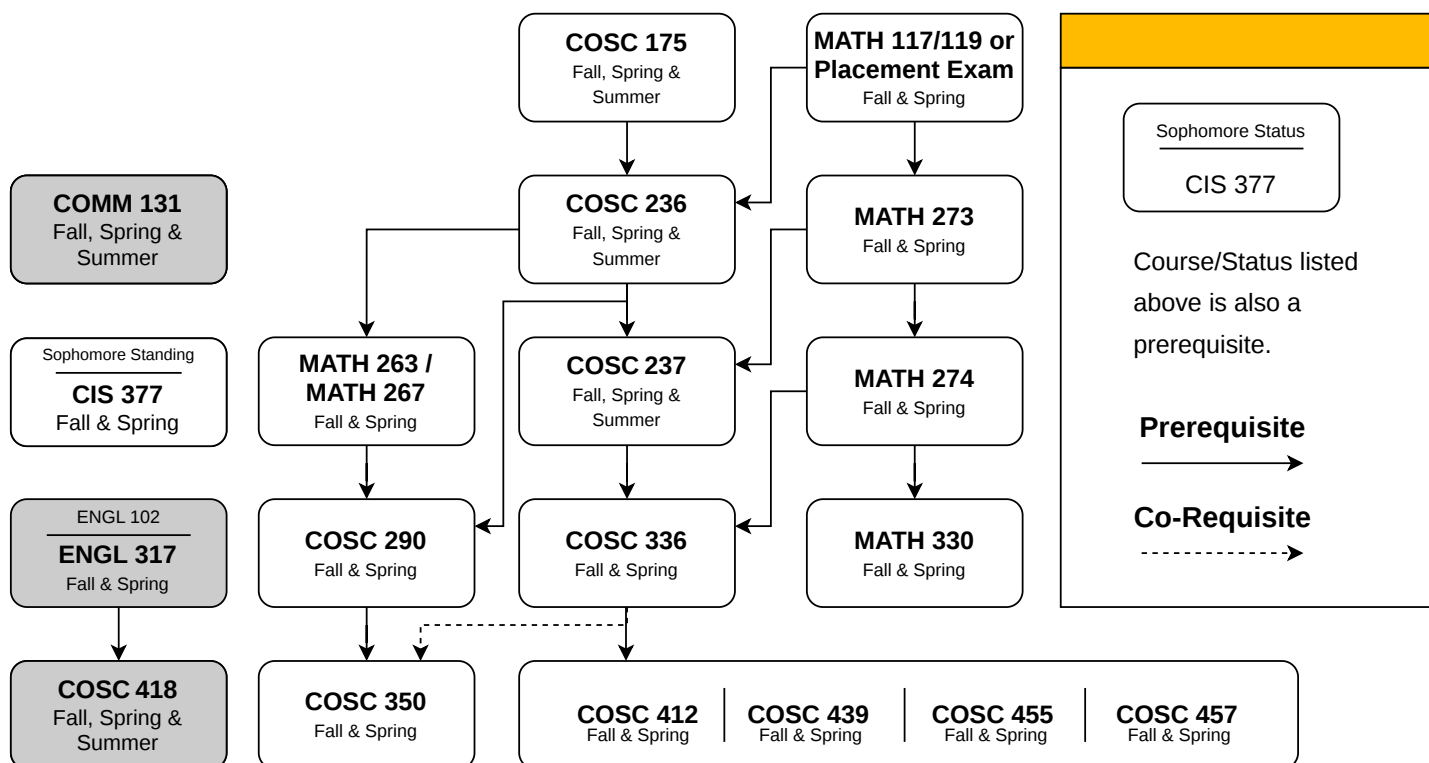
Elective Math Courses

3-4 Units

Select one math course from the following:		Units
_____	MATH 265 Elementary Linear Algebra	4
_____	MATH 275 Calculus III	4
_____	MATH 314 Cryptography	3
_____	MATH 315 Applied Combinatorics	3
_____	MATH 369 Intro to Abstract Algebra	3
_____	MATH 374 Differential Equations	3
_____	MATH 377 Mathematical Models	3
_____	MATH 378 Scientific Modeling & Simulation	3
_____	MATH 435 Numerical Analysis I	3
_____	MATH 436 Numerical Analysis II	3
_____	MATH 437 Operations Research	3
_____	MATH 451 Graph Theory	3

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COSC Elective Prerequisites and Offering

Elective	Prerequisites	Offered
GROUP A		
COSC 417	COSC 336	Spring
COSC 432	COSC 412	Fall
COSC 436	COSC 336	Fall & Spring
COSC 459	COSC 336, MATH 330	Spring
COSC 461	COSC 336	Spring
COSC 467	COSC 336	Fall & Spring
COSC 471	COSC 336	Occasionally
COSC 472	COSC 336	Spring
COSC 483	COSC 336	Fall
GROUP B		
COSC 397	COSC 336, 2.75 GPA, instructor consent	Fall, Spring & Summer
COSC 431	COSC 336, instructor consent	Fall, Spring & Summer
COSC 435	COSC 336	Fall & Spring
COSC 440	COSC 439	Fall
COSC 442	COSC 412	Fall & Spring
COSC 443	COSC 350, CIS 377	Fall
COSC 450	COSC 350, MATH 314	Fall
COSC 458	COSC 455, Co-Req COSC 457	Fall
COSC 462	COSC 336	Fall
COSC 465	COSC 336	Occasionally
COSC 484	COSC 336	Fall
COSC 486	COSC 336	Occasionally
COSC 495	COSC 336, approved proposal	By Permission

MATH Prerequisites

Elective	Prerequisites
MATH 263	MATH 119, COSC 236
MATH 265	MATH 211 OR 273
MATH 267	MATH 273
MATH 273	MATH 119
MATH 274	MATH 273
MATH 275	MATH 274
MATH 314	COSC 236, MATH 265 or 267, MATH 330
MATH 315	MATH 263, 265 or 267
MATH 330	MATH 274
MATH 374	MATH 274
MATH 377	MATH 265, 274, COSC 236
MATH 378	MATH 274, COSC 236
MATH 435	MATH 265, 274, COSC 236
MATH 436	MATH 435
MATH 437	MATH 265, 331
MATH 451	MATH 263 OR 267
MATH 467	MATH 369

**All course prerequisites are strictly enforced.*

Find more advising resources at:

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

View Third Attempt / Prerequisite Policy at:

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

Visit the CIS Advising Hub in YR 207

Or Email: cisadvising@towson.edu

