Major - Computer Science

Computer and Information Sciences

Catalog Year 2023-2024 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

8 Units

Select 2 lab science courses from the following:

			Units
_____	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	Data Mining	3
_____	COSC 471	Computer Graphics	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 450	Network Security	3
_____	COSC 458	Application Software Security	3
_____	COSC 465	Robotics	3
_____	COSC 484	Web-Based Programming	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

Total Units: 81-83

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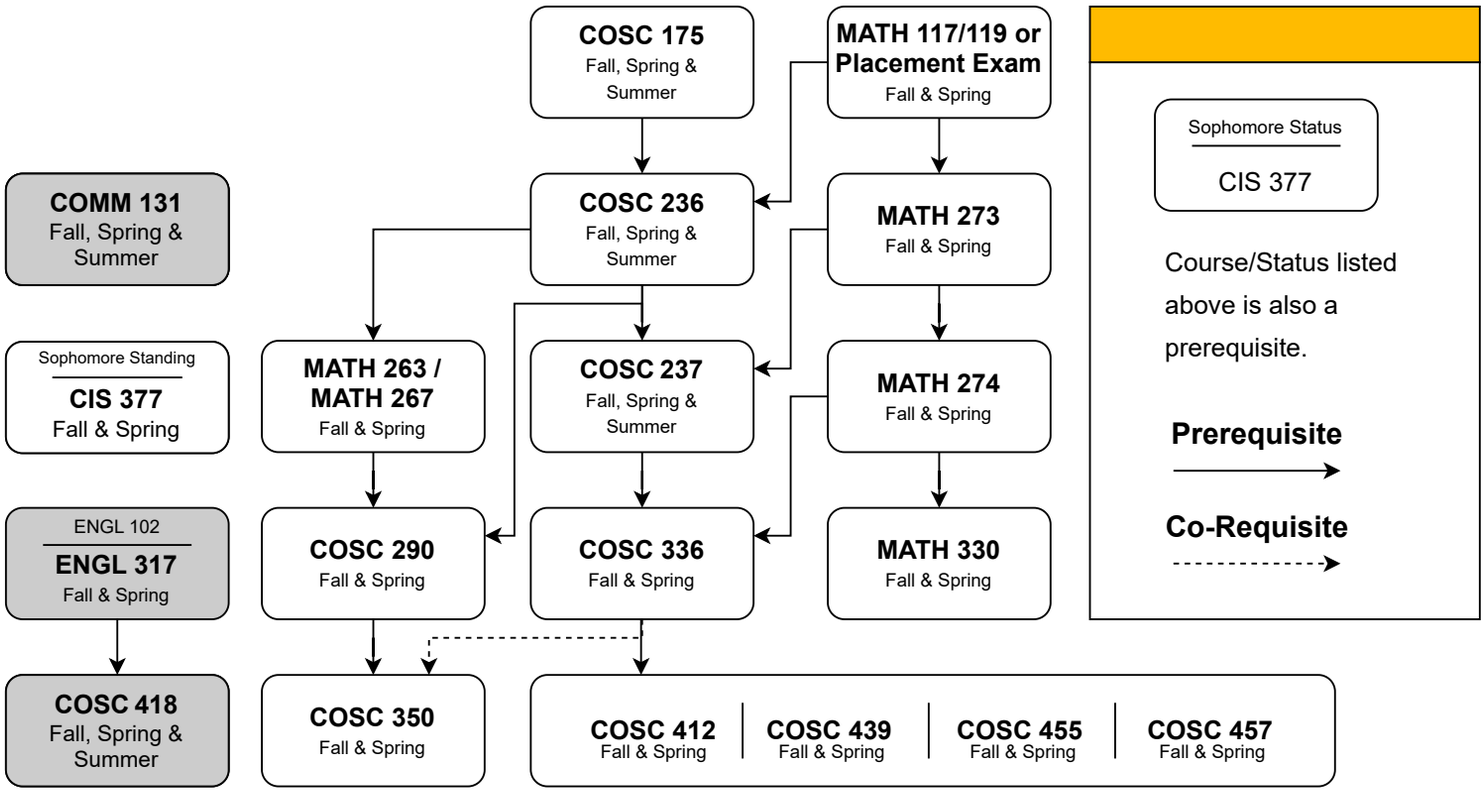
Catalog Year 2023-2024 and Later



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 483	COSC 336	Fall
GROUP B		
COSC 397	COSC 336, 2.75 GPA, instructor consent	Fall, Spring & Summer
COSC 431	9 units of CS courses, instructor consent	Fall, Spring & Summer
COSC 435	COSC 336	Fall & Spring
COSC 440	COSC 439	Fall
COSC 442	COSC 412	Fall & Spring
COSC 450	COSC 350, MATH 314	Fall
COSC 458	COSC 455, Co-Req COSC 457	Fall
COSC 465	COSC 336	Occasionally
COSC 484	COSC 336	Fall
COSC 495	Senior Standing and instructor consent	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

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

**All course prerequisites are strictly enforced.*

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