

Computer and Information Sciences

Catalog Year 2022-2023 and Later

Required Computer Science Courses

36 Units

		Units	Offered
_____	CIS 377 Introduction to Cybersecurity	3	Fall, Spring & Summer
_____	COSC 109 Computers & Creativity	3	Fall, Spring, Mini & Summer
_____	COSC 236 Intro to Computer Science I	4	Fall, Spring & Summer
_____	COSC 237 Intro to Computer Science II	4	Fall, Spring & Summer
_____	COSC 336 Data Structures & Algorithm Analysis	4	Fall & Spring
_____	COSC 412 Software Engineering	3	Fall & Spring
_____	COSC 418 Ethical and Societal Concerns CS (Core 14)	3	Fall, Spring & Summer
_____	COSC 482 Teaching CS in Secondary Schools	3	Spring
_____	COSC 492 Internship Secondary Education - CS	6	Spring
_____	ITEC 250 Fundamentals of Computer Networks	3	Fall & Spring

Required Mathematics Courses

39 Units

		Units	Offered
_____	MATH 265 Elementary Linear Algebra	4	Fall, Spring & Summer
_____	MATH 263 Discrete Mathematics OR	4	Fall, Spring & Summer
_____	MATH 267 Introduction to Abstract Mathematics	4	Fall, Spring & Summer
_____	MATH 273 Calculus I	4	Fall, Spring & Summer
_____	MATH 274 Calculus II	4	Fall, Spring & Summer
_____	MATH 275 Calculus III	4	Fall, Spring & Summer
_____	MATH 310 Functions & Modeling (Core 9)	3	Spring
_____	MATH 330 Introduction to Statistical Methods	4	Fall, Spring & Summer
_____	MATH 353 Euclidean and Non-Euclidean Geometry	3	Fall
_____	MATH 423 Teaching Mathematics in Secondary Schools	3	Fall
_____	MATH 426 Internship Secondary Education - Math	6	Fall & Spring

Required Education Courses

25 Units

		Units	Offered
_____	SEMS 110 Intro to STEM Teaching I	1	Fall
_____	SEMS 120 Intro to STEM Teaching II	1	Fall & Spring
_____	SEMS 230 Knowing & Learning	3	Fall & Spring
_____	SEMS 240 Classroom Interactions	3	Fall & Spring
_____	SEMS 250 Prospectives in Science & Math (Core 5)	3	Fall & Spring
_____	SEMS 370 Project-Based Instruction	3	Fall & Spring
_____	SEMS 430 Seminar in STEM Education	1	Fall & Spring
_____	SEMS 498 Internship Math & Secondary Education	3	Fall & Spring
_____	SCED 460 Using Reading & Writing in Sec Schools	3	Fall & Spring
_____	SCED 461 Teaching Reading in Sec Content Areas	3	Fall & Spring

*All prerequisites are strictly enforced.

Major - Computer & Mathematical Sciences

Secondary Education Concentration

Catalog Year 2022-2023 and Later

Four Year Plan - Freshmen and Sophomore Years

Freshman Year			
Fall Term		Spring Term	
Course	Units	Course	Units
SEMS110 Introduction to STEM Teaching I: Inquiry Approaches to Teaching	1	SEMS 120 Introduction to STEM Teaching II: Inquiry-Based Lesson Design	1
MATH 273 Calculus I	4	MATH 274 Calculus II (Core Category 3)	4
COSC 109 Computers & Creativity (Core Category 4)	3	COSC 236: CS I	4
Core 1 (or Core 2)	3	ENGL 102 (Core Category 2)	3
Core 6	3	Core 7	4
Total	14	Total	16

Sophomore Year			
Fall Term		Spring Term	
Course	Units	Course	Units
SEMS 230 Knowing and Learning	3	SEMS 240 Classroom Interactons	3
MATH 265 Elementary Linear Algebra	4	MATH 263 or MATH 267	3-4
COSC 237: CS II	4	COSC 336 Data Structures and Algorithm Analysis	4
Core 8	4	Core Curriculum 11	3
Core 10	3	Core Curriculum 12	3
Total	18	Total	16-17

Core Categories not satisfied by major: 1, 2, 6, 7, 8, 10, 11, 12, 13.

The minimum total number of required units for graduation is 128.

Four Year Plan - Junior and Senior Years

Junior Year			
Fall Term		Spring Term	
Course	Units	Course	Units
SEMS 250 Perspectives on Science and Math (Core Category 5)	3	SEMS 370 Project-Based Instruction	3
MATH 353 Euclidean and Non-Euclidean Geometries	3	SCED 460 Using Reading & Writing in the Secondary Schools	3
MATH 275 Calculus III	4	MATH 310 Functions & Modeling (Core Category 9)	3
ITEC 250 Fundamentals of Computer Networks	3	COSC 412 Software Engineering	3
COSC 377 Information Systems Security	3	Core Curriculum 13	3
Total	16	Total	15

Senior Year			
Fall Term		Spring Term	
Course	Units	Course	Units
SEMS 498 Internship in Mathematics and Science Secondary Education	3	MATH 426 Internship in Secondary Education – Mathematics	6
SCED 461 Teaching Reading in the Secondary Content Areas	3		
MATH 423 Teaching Mathematics in the Secondary Schools	3	COSC 492 Internship in Secondary Education – Computer Science	6
MATH 330 Intro to Statistical Methods	4		
COSC 482 Teaching Computer Science in the Secondary Schools	3	SEMS 430 Seminar in STEM Secondary Education	1
COSC 418 Computer Ethics (Core Category 14) Needs junior/senior standing.	3		
Total	19	Total	13-19

Find more advising resources at:

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

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

Visit the CIS Advising Hub in YR 207

Or Email: cisadvising@towson.edu