Department of Computer Science

UG Roadmap – Fall 2024

The Computer Science Major constitutes the following components:

- **Colors indicate the specific area.**

Computing Core	18 Courses – 58 Credits
Supporting Course	7 Courses – 22 Credits
Major Elective	4 Courses – 12 Credits
General Ed (GE)	Gen Education: 47 Credits University Electives: 6 Credits
	The total is 132 credits (and not 145 credits) because General Education's Science and Mathematics category's requirement of 1 lab course (4 credits), 1 Mathematics course (3 credits), 1 Computer Science course (3 credits), and one course from any domain (3 credits) will be fulfilled from the Core, Supporting and Elective courses of Computer Science. This means 13 credits from these different streams of Computer Science will simultaneously satisfy General Education's 13 credits. These credit hours will be counted only once.

The current roadmap is rigorously designed to provide ample time to the students for self-learning and experiential learning while maintaining a good GPA and graduating on time. Students may avail summer semester to catch up with the roadmap. Students must adjust their roadmap according to the pre-reqs of their desired Major Electives. Please note the following:

- Students who have not studied Mathematics at the intermediate level have to pass deficiency courses of Mathematics (06 credit hours i.e. MATH 101, MATH 102) in the first two semesters. They may avail the Summer Semester to register for MATH 111.
- For CSCS100 – Introduction to Computing to be counted as a general education requirement, it must be studied in the freshmen year only.
- MATH 111- Calculus & Analytic Geometry/ STAT 115 – Probability & Statistics/ COMP 113 – Discrete Math: Will be allocated to the students according to seat availability in the first two semesters.
- The degree will not be conferred before the regular 8 semesters, hence COMP 497 (A) – Senior Project A must be registered in the 7th semester only.

Students must contact Faculty Advisor to adjust their roadmap according to the pre-reqs of their desired Major Electives to complete their degree on time.

Proposed Roadmap for Computer Science Major
Fall 2024

	Course	C. Hr	Pre-Req	Course	C. Hr	Pre-req
Freshmen	COMP 102 – Programming 1 (Lab)	4		COMP 111 – Programming II (Lab)	4	COMP102
	CSCS 105 – Basic Electronics (Lab) / GE (lab)	4		COMP 206 – Digital Logic Design/ CSCS 105 – Basic Electronics	3/ 4	
	MATH 111- Calculus & Analytic Geometry/ STAT 115 – Probability & Statistics/ COMP 113 – Discrete Math	3		MATH 111- Calculus & Analytic Geometry/ STAT 115 – Probability & Statistics/ COMP 113 – Discrete Math	3	
	GE: WRCM 101	3		MATH 111- Calculus & Analytic Geometry/ STAT 115 – Probability & Statistics/ COMP 113 – Discrete Math	3	
	GE: *UNIV100	3		GE: WRCM 102	3	
	Maximum Allowed Credits	18		**Maximum Allowed Credits**	18	
	SUMMER (Optional)					
	2 GE					

	Course	C. Hr	Pre-Req	Course	C. Hr	Pre-req
Sophomore	COMP 200 – Data Structures & Algos (Lab)	4	COMP111, COMP 113	COMP 220 – Software Engineering/ COMP 300 – Computer Organization (Lab)	3	COMP200
	COMP 300 – Computer Organization (Lab)/ COMP 206 – Digital Logic Design	3	COMP111, COMP206	COMP 301 – Operating Systems (Lab)	3	COMP200, COMP300
	CSCS 201 – Multivariate Calculus	3	MATH 111	COMP 213 – Database Systems (Lab)	3	COMP200
	CSCS 202 – Comp. Linear Algebra	3	MATH111	CSCS 203 – Differential Equations	3	MATH111
	GE	3		GE	3	
				GE	3	
	Maximum Allowed Credits	18		**Maximum Allowed Credits**	18	
	SUMMER (Optional)					
	2 GER					

	Course	C. Hr	Pre-Req	Course	C. Hr	Pre-req
Junior	COMP 360 – Intro to AI (Lab)	3	COMP200	COMP 451 - Compiler Construction (Lab)	3	COMP302
	COMP 302 – Theory of Automata	3	COMP200	COMP 303 – D & A of Algorithms	3	COMP200
	CSCS 320 – Numerical Computing (Lab)	3	MATH111	Major Elective	3	
	Major Elective	3		Major Elective	3	
	GE	3		GE	3	
	GE	3		GE	3	
	Maximum Allowed Credits	18		**Maximum Allowed Credits**	18	
	SUMMER (Optional/ If required)					
	Any, Reserve for Internships, Certifications					

	Course	C. Hr	Pre-Req	Course	C. Hr	Pre-req
Senior	COMP 497A – Senior Project	3	COMP213, COMP220	COMP 497B – Senior Project	3	COMP497A
	COMP 410 – Parallel & Dist Comp.	3	COMP301	COMP 421 – Information Security	3	COMP311, STAT115
	COMP 311 – Computer Networks (Lab)	3	COMP301	COMP 401 – Ethics	1	COMP220
	Major Elective	3		GE	3	
	GE	3				
	GE	3				
	Maximum Allowed Credits	18		**Maximum Allowed Credits**	18	

Wish you all the best.