COMPUTER SCIENCE, BS

The Department of Computer Science, Data Science, and Information Technology offers majors in Computer Science and Information Technology. Data Analytics and Cyber Security programs are also offered along with the Center for Cyber Security and Information Assurance.

Students must work directly with an advisor from their program to ensure that they they know, understand, and meet all the requirements of that program prior to graduation.

A minimum of 15 credit hours in a major must be completed at Roosevelt University.

For additional information on the Cyber Security program please see the Cyber Security and Information Assurance Center (https://www.roosevelt.edu/centers/cyber-security) web site.

Notes:

Individual program have different requirements. Students are responsible for knowing and meeting all program specific requirements

Computing and and Information Technology courses taken more than eight years ago cannot be counted towards degree requirements

A double major of Computer Science and Information Technology is not offered.

The Computer Science program has an emphasis on mathematics and systems theory. It prepares students to pursue careers in highly technical areas or to go on to pursue graduate degrees in computer science.

At least 30 credit hours of credit must be taken at Roosevelt University, with at least 15 of these in the computer science major; at most 60 credit hours may be taken at the 100 level. At least 69 credit hours must be in non-computing courses. Students planning to pursue an MS in computer science should take MATH 231 CALCULUS I, MATH 245 DISCRETE STRUCTURES, and MATH 246 LINEAR ALGEBRA, as well as CST 280 INTRODUCTION TO ALGORITHMS in their curriculum.

Requirements

- Students must maintain a 2.0 GPA in the major, and must earn grades of C- or higher in all major coursework.
- At least 30 credit hours of credit must be taken at Roosevelt University, with at least 15 of these in the computer science major; at most 60 credit hours may be taken at the 100 level.
- At least 60 credit hours in the natural sciences, mathematics, and/or psychology.

Code	Title	Credit Hours
Core		
CST 150	COMPUTER SCIENCE I	4
CST 250	COMPUTER SCIENCE II	4
CST 280	INTRODUCTION TO ALGORITHMS	3
CST 311	ANALYSIS OF REAL WORLD NETWORKS	3
CST 317	OPERATING SYSTEMS	3
CST 333	DATABASE SYSTEMS	3
CST 370	SOFTWARE ENGINEERING I	3
CST 372	PROGRAMMING LANGUAGES	3
Select one of the following:		3
CST 337	THEORY OF COMPUTATION	
CST 338	EFFICIENT COMPUTING	
CST 387	ALGORITHM DESIGN	
Electives		
Three 300+ level CST courses		9
Project-Based Course		
Select one of the following:		3
CST 309	DATA MINING	
CST 376	DISTRIBUTED APPLICATIONS	
CST 399	SENIOR PROJECT	
CST 312	BIG DATA	
CST 343	O.O.P AND WEB SERVICES	
CST 365	NETWORK APPLICATIONS PROGRAM	
CST 367	WEB-BASE DATABASE APPLICATIONS	
CST 3XX	Other Programming Course Chosen With CST advisor	
Required Math Courses		
MATH 217	ELEMENTARY STATISTICS	3
MATH 231	CALCULUS I	5
MATH 245	DISCRETE STRUCTURES	3
MATH 246	LINEAR ALGEBRA	3
General Education, University Writing Requirement, and Electives		
Courses to total 120		65
Total Credit Hours		120

CORE Requirements (General Education)

Code	Title	Credit Hours
First Year Success Course or Transfer Success Course		
FYS 101	FIRST YEAR SUCCESS COURSE	1
or TRS 101	TRANSFER SUCCESS 101	
Communication Requirement		
ENG 101	COMPOSITION I: CRITICAL READING & WRITING	3
ENG 102	COMPOSITION II: INTRODUCTION TO ACADEMIC RESEARCH	3
LIBS 201	WRITING SOCIAL JUSTICE (Transfer students with acceptable communication credit may be exempt from this requirement.)	3
Ideas Across Disciplines		
3 credits in coursework categorized as Ideas.		3
Humanities and Fine and Performing Arts		
9 credits from the following subject areas: African-American Studies, Art History, English (excluding ENG 101 and ENG 102), History, Languages, Music, Philosophy, Theatre, Speech and Women's and Gender Studies		9
Mathematics		
MATH 110	QUANTITATIVE LITERACY (or above)	3
Science		
One biological science and one physical science required (at least one must be a four-hour lab). (Not applicable for science majors)		7-8
Social Sciences		

9 credits from the following subject areas: African-American Studies, Anthropology, Economics, History, Journalism, Philosophy, Political Science, Psychology, Sociology and Women's and Gender Studies	9
Experiential Learning	
6 credits from coursework categorized as Experiential Learning.	
Total Credit Hours	41-42

These quantitative requirements also apply to degrees in the College of Arts and Sciences:

- Students must earn a minimum of 120 semester hours.
- Students may apply no more than 60 credit hours of 100-level courses toward the degree.
- Students must apply no fewer than 60 credit hours of 200- and 300-level courses toward the degree.
- Students must have at least 18 credit hours (of the 60 credit hours above) at the 300 level.
- Students may transfer in no more than 70 credit hours from community colleges.
- Students must take their final 30 hours at Roosevelt University. Note that some majors have additional requirements for RU hours.
- Students must have a grade point average of 2.0 or higher to graduate. Note that some majors have additional GPA requirements.
- Students may apply no more than 51 hours in the major (BA) or 57 hours in the major (BS)

Your degree map is a general guide suggesting courses to complete each term on the academic pathway to your degree. It is based on the most current scheduling information from your academic program. Your program's degree map is reviewed annually and updated as schedules change (although you retain the same course requirements as long as you are continuously enrolled in your degree program).

Always work closely with your academic advisor to understand curriculum requirements and scheduling, as each student's academic plan can look slightly different.

Year 1

Fall	Credit Hours	Spring	Credit Hours
ENG 101	3	ENG 102	3
FYS 101	1	Ideas Across Disci	3
MATH 121	3	MATH 217	3
Social Science #1	3	CST 150	4
Humanities #1	3	MATH 122	3
Physical Science Course[4]	3		
	16		16

Year 2

Fall	Credit Hours	Spring	Credit Hours
CST 250	4	LIBS 201	3
MATH 231	5	MATH 245	3
Social Science #2	3	CST 333	3
BIOL 111 or 112[4]	4	Humanities #2	3
		Social Science #3	3
	16		15

Year 3

Fall	Credit Hours	Spring	Credit Hours
CST 280	3	CST 311	3
CST 372	3	CST 317	3
CST 3XX	3	Project-Based Computer Science Course	3
MATH 246	3	Experiential Learning #1[5]	3
Humanities #3	3	General Elective[1]	3
	15		15

Year 4

Fall	Credit Hours	Spring	Credit Hours
CST 370	3	CST 3XX[3]	3
CST 337, 338, or 387	3	CST 3XX[3]	3
Experiential Learning #2[5]	3	General Elective[1]	3
General Elective[1]	3	General Elective[1]	3
General Elective[1]	3		
	15		12

Total Credit Hours 120

1 Or course towards an optional Minor.

2 Any course at the 200 level within the discipline.

3 Any course at the 300 level within the discipline.

4 One Natural Science course must have a lab.

5 Experiential Learning class must be 200/300 level. Satisfies CORE Experiential Learning requirement.