Computer Science Degree Checklist

Required CS Courses (44 credits)	Credits	Prerequisites
CMSC 120 OOP with Java	4	N/A
CMSC 130 Graphical User Interfaces in Java	4	CMSC 120
CMSC 150 Principles of Database Design	3	CMSC 115 or CMSC 120
CMSC 230 Advanced Java	4	CMSC 130
CMSC 240 C Programming with Parallelism	3	CMSC 115 or CMSC 120
CMSC 270 Data Structures using C++	4	CMSC 230 and CMSC 240
DGFR 275 Introduction to Networks	3	DGFR 122 or CMSC 130
CMSC 320 Computer Ethics, Social Impact & Security	3	CMSC 150 and CMSC 230
CMSC 330 Computer Organization	3	CMSC 240
CMSC 350 Org. of Programming Languages	3	CMSC 270
CMSC 370 Analysis of Algorithms & Data Structures	3	CMSC 270
CMSC 380 Operating Systems	3	CMSC 270
CMSC 480 Object-Oriented Software Engineering	4	CMSC 380

CS Electives (9 credits, at most 3 from internship)	Credits	Prerequisites
CMSC 245 Game Programming	3	CMSC 130
CMSC 310 Software Developmental Methods	3	CMSC 120 and CMSC 150
CMSC 345 Mobile Device Application Development	3	CMSC 230
CMSC 355 Web App Development and Deployment	3	N/A
CMSC 360 Computer Networks	3	N/A
CMSC 375 Web Development Frameworks	3	CMSC 355
CMSC 395 Web Services	3	CMSC 355
CMSC 410 Graphics Programming	3	CMSC 130
CMSC 445 Survey of Parallel Programming	3	N/A
CMSC 460 Internet Programming	3	N/A
CMSC 491 Special Topics	3	N/A
CMSC 498 Internship (2-12 credits)	3	N/A
DATA 310 Databases for Big Data	3	CMSC 150
DATA 320 Data Mining	3	(CMSC 115 or CMSC 120) and (STAT 141 or 241)
DATA 410 Machine Learning	3	(CMSC 130 or DATA 110) and (STAT 141 or 241)
MATH 440 Theory of Computation	3	MATH 250 and (CMSC 115 or CMSC 120)

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Required Mathematics Courses (17 credits)

Required Mathematics Courses (17 credits)	Credits
MATH 160 Calculus I	4
MATH 170 Calculus II	4
MATH 250 Discrete Math	3
STAT 141 Intro Stats **OR** STAT 241 Intro Prob and Stats	3
MATH course numbered 270 or higher	3

Other Required Courses for CS majors	Credits
COMM 101 Public Speaking	3
Science Lab 1 (see options below)	4
Science Lab 2 (see options below)	4

General Education	Credits	Required for CS Majors
First Year Seminar (U)	3	
Writing (W) (3 credits)	3	
Oral Communication (O)	3	COMM 101 Public Speaking
History (H)	3	
Quantitative (Q)	4	MATH 160 Calculus 1
Diversity (D)	3	
Global Perspective (G)	3	
Citizenship and Society (S)	3	
Ethical Reasoning (E)	3	
Critical Reasoning (R)	3	Math 250 Discrete Math
Natural World (N)	3-4	
Technology (T)	4	CMSC 120 OOP with Java
Literature (L)	3	
Arts (A) or Creative (C)	3	

120 credits are needed to graduate from Commonwealth University.

Approved Science Lab Courses

- BIOLOGY 110-111 (Principles of Biology 1 and 2)
- CHEM 121-122 (General Chemistry 1 and 2)
- EGGS 120-130 (Physical Geology and Historical Geology)
- PHYSICS 208-209 (Introductory Physics 1 and 2, algebra based)
- PHYSICS 211-212 (General Physics 1 and 2, calculus based)