



# VANDERBILT School of Engineering

## Computer Science Curriculum (2023-2024 Catalog Year) 120 hours (minimum)

### 1. Mathematics (17-19 hours)

Required components below. Full options available in catalog.

- a) Calculus/Linear Algebra (14-16 hours) A sequence selected from the following:
- i. MATH 1300 (1200 + 1201), 1301, 2300 and one of 2410 or 2600 **or**
  - ii. MATH 1300, 1301, 2500, 2501
- b) Statistics/Probability (3 hours) MATH 2810 or MATH 2820 or MATH 3640

### 2. Science (12 hours)

To be selected from the following list and include at least one laboratory course: BSCI 1100, 1100L, 1510, 1510L, 1511, 1511L, 2218, 2219; CHEM 1601, 1601L, 1602, 1602L; Earth and Environmental Sciences 1510, 1510L; MSE 1500, 1500L; PHYS 1601, 1601L, 1602, 1602L. Recommended: CHEM 1601, 1601L; PHYS 1601, 1602.

### 3. Introduction to Engineering (3 hours)

ES 1401-1403 Introduction to Engineering (3 hours) F

### 4. Liberal Arts Core (18 hours)

#### 5. Computer Science Core (25 hours)

CS 1101 Programming and Problem Solving (3 hours) F/S  
CS 2201 Program Design & Data Structures (3 hours) F/S  
CS 2212 Discrete Structures (3 hours) F/S  
CS 3250 Algorithms (3 hours) F/S  
CS 3251 Intermediate Software Design (3 hours) F/S  
CS 3270 Programming Languages (3 hours) F/S  
CS 3281 Principles of Operating Systems I (3 hours) F/S  
CS 2281+2281L Computer Architecture + Laboratory (4 hours)

#### 6. Computer Science Depth (15 hours)

To include at least one course selected from CS 4260 or CS 4277 or CS 4278. Other requirements listed in catalog.

CS 4260 **or** Artificial Intelligence (3 hours) F  
CS 4277 **or** Cyber Security (3 hours) F  
CS 4278 Principles of Software Engineering (3 hours) F

#### 7. Computer Science Project (3 hours)

To be selected from CS 3892 or CS 4239 or CS 4249 or CS 4269 or CS 4279 or CS 4287 or CS 4289

#### 8. Computer Science Seminar (1 hour)

CS 4959 Computer Science Project Seminar (1 hour) F

#### 9. Technical Electives (6 hours)

#### 10. Open Elective (18-20 hours)

Courses excluded from the listings in the Liberal Arts Core may be taken as open electives.

#### 11. Computers and Ethics (3 hours)

May be used to satisfy three hours from the Liberal Arts Core (#4) or Open Electives (#10)  
CS 1151 Computers and Ethics (3 hours) F/S

#### 12. Writing Component (3 hours)

At least one "W"-designated course or 1111 course in the English Language must be included from the Liberal Arts Core (#4), Technical Electives (#9) or Open Electives (#10)



# VANDERBILT School of Engineering

## Computer Science Prerequisites and Corequisites (2023-2024 Catalog Year)

### 1. Mathematics (20-22 hours)

Check individual course listings in catalog for requisites.

### 2. Basic Science (12 hours)

Check individual course listings in catalog for requisites.

### 3. Introduction to Engineering (3 hours)

ES 1401-1403      None.

### 4. Liberal Arts Core (18 hours)

Check individual course listings in catalog for requisites.

### 5. Computer Science Core (25 hours)

CS 1101	None.
CS 2201	CS 1101 or 1104
CS 2212	A course in CS or 2 semesters of calculus
CS 3250	CS 2201; CS 2212
CS 3251	CS 2201
CS 3270	CS 2201; CS 2231 or EECE 2123
CS 3281	CS 2231 or EECE 2123; CS 3251
CS 2281+2281L	CS 2201

### 6. Computer Science Depth (15 hours)

To include at least one course selected from CS 4260 or CS 4277 or CS 4278. Other requirements listed in catalog.

CS 4260 <b>or</b>	CS 3250; CS 3251; MATH 2810 or MATH 2820 or MATH 3640
CS 4277 <b>or</b>	CS 3251
CS 4278	CS 3251

### 7. Computer Science Project (3 hours)

To be selected from CS 3892 or CS 4239 or CS 4249 or CS 4269 or CS 4279 or CS 4287 or CS 4289

Check individual course listings in catalog for requisites.

### 8. Computer Science Project Seminar (1 hour)

CS 4959      CS 3251

### 9. Technical Electives (6 hours)

Check individual course listings in catalog for requisites.

### 10. Open Elective (18-20 hours)

Courses excluded from the listings in the Liberal Arts Core may be taken as open electives.

### 11. Computers and Ethics (3 hours)

May be used to satisfy three hours from the Liberal Arts Core (#4) or Open Electives (#10).

May not be taken on a pass/fail grading basis by CS majors or minors.

CS 1151      None.

### 12. Writing Component (3 hours)

At least one "W"-designated course or 1111 course in the English Language must be included from the Liberal Arts Core (#4), Technical Electives (#9), or Open Electives (#10).