



# VANDERBILT School of Engineering

## Engineering Science Curriculum (2023-2024 Catalog Year) 121 hours (minimum)

### 1. Basic Science (16 hours)

CHEM 1601+1601L General Chemistry I and Laboratory (4 hours) F/S  
Plus 12 additional hours, with 2 courses in a single discipline:  
BSCI 1510+1510L, BSCI 1511+1511L, CHEM 1602+1602L, PHYS 1601+1601L, PHYS 1602+1602L, MSE 1500+1500L

### 2. Mathematics (14 hours)

MATH 1300 Accelerated Single-Variable Calculus I (4 hours) F/S  
MATH 1301 Accelerated Single-Variable Calculus II (4 hours) F/S  
MATH 2300 Multivariable Calculus (3 hours) F/S  
MATH Elective MATH 2400 or above

### 3. Engineering (43 hours)

#### 3a. Engineering Fundamentals (12 hours)

CS 1100 or 1101 or 1103 Introductory Programming (3 hours) F/S  
ES 1401-1403 Introduction to Engineering (3 hours) F  
ES 2100W Technical Communications (3 hours) F/S  
ENGM 3700 Program & Project Management (3 hours) F/S/SU

#### 3b. Engineering Core (12 hours)

To be selected from courses in any of the following disciplines: BME, CHBE, CE, CS, ECE, ENVE, MSE, ME, NANO, SC (except BME 1015, 2860; CS 1000, 1151).

#### 3c. Engineering Electives (15 hours)

To be selected from any Engineering School courses (including ES and ENGM), except BME 1105, 2201, 2860; CS 1000, 1151; ES 1115, 2700, 3884; ENGM 2440, 4800.

#### 3d. Senior Capstone (4 hours)

ES 4951 Senior Capstone Experience (3 hours) S  
ES 4959 Senior Engineering Design Seminar (1 hour) F

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

### 5. Open Electives (6 hours)

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

### 6. Program Concentration (24 hours)

In consultation with the academic adviser, each student must identify a meaningful sequence of courses, not counting certain introductory-level courses, that directly contributes to meeting states career goals. Program concentrations are approved by the academic adviser and the program director in advance and become part of the student's degree audit.

**Notes:** No more than 24 credit hours of business-related course work (BUS, BUSA, ENGM, FNEC, MGRL) may be applied to the ES degree program. Only one business-related minor (BUS, ENGM, FNEC, MGRL, HOD) may count to a student's academic program. Credit for only one of CS 1101 or 1104 may be applied to the ES degree program. CS 1100 is not open to students who have earned credit for CS 1104 without permission. If both CS1100 and CS1104 are taken (with permission), total credit for both CS 1100 and CS 1104 will not exceed 4 hours. No more than 6 credit hours of courses numbered 3840 to 3879 in any program may be applied to the ES degree program.



# VANDERBILT School of Engineering

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

### 1. Basic Science (16 hours)

CHEM 1601+1601L    None.  
Plus 12 additional hours, with 2 courses in a single discipline:  
BSCI 1510+1510L, BSCI 1511+1511L, CHEM 1602+1602L, PHYS 1601+1601L, PHYS 1602+1602L, MSE 1500+1500L

### 2. Mathematics (14 hours)

MATH 1300            None.  
MATH 1301            MATH 1300 or MATH 1201  
MATH 2300            MATH 1301 or MATH 2200  
MATH Elective        See catalog listings

### 3a. Engineering Fundamentals (12 hours)

ES 1401-1403        None.  
CS 1100 **or** 1101 **or** 1103    None.  
ES 2100W            Sophomore Standing  
ENGM 3700            MATH 1301 or BUS 1700; Junior Standing

### 3. Engineering (43 hours)

#### 3b. Engineering Core (12 hours)

Check individual course listings in catalog for requisites.

#### 3c. Engineering Electives (15 hours)

Check individual course listings in catalog for requisites.

#### 3d. Senior Capstone (4 hours)

ES 4951              Senior Standing; Corequisite: ENGM 3700  
ES 4959              Senior Standing

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

### 5. Open Electives (6 hours)

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

### 6. Program Concentration (24 hours)

In consultation with the academic adviser, each student must identify a meaningful sequence of courses, not counting certain introductory-level courses, that directly contributes to meeting states career goals. Program concentrations are approved by the academic adviser and the program director in advance and become part of the student's degree audit.

**Notes:** No more than 24 credit hours of business-related course work (BUS, BUSA, ENGM, FNEC, MGRL) may be applied to the ES degree program. Only one business-related minor (BUS, ENGM, FNEC, MGRL, HOD) may count to a student's academic program. Credit for only one of CS 1101 or 1104 may be applied to the ES degree program. CS 1100 is not open to students who have earned credit for CS 1104 without permission. If both CS1100 and CS1104 are taken (with permission), total credit for both CS 1100 and CS 1104 will not exceed 4 hours. No more than 6 credit hours of courses numbered 3840 to 3879 in any program may be applied to the ES degree program.