

# DUAL DEGREE ENGINEERING PROGRAM (PARTNERSHIP WITH WASHINGTON UNIVERSITY)

## Major Requirements

The requirements for major in **Applied Science** are 40 credits:

Code	Title	Hours
CHEM 127	General Chemistry I (not required for Computer Engineering)	4
MATH 121	Calculus I	4
MATH 122	Calculus II	4
MATH 223	Calculus III	4
MATH 311	Differential Equations	4
PHYS 115	Foundations of Modern Physics	4
PHYS 128	Physics for Scientists and Engineers	4
PHYS 211	Physics for Scientists and Engineers II	4
PHYS 231	Introduction to Instrumentation	2
PHYS 233	Introduction to Computational Physics	2
PHYS 324	Modern Physics	4
<b>Concentration</b>		
One concentration must be chosen from the following:		4-20
Biomedical		
Chemical		
Computer		
Environmental		
Electrical		
Mechanical		
Systems-Sciences and Engineering		
Total Hours		44-60

## Concentrations for a Major in Applied Science

### BIOMEDICAL ENGINEERING CONCENTRATION

**Biomedical Engineering Concentration** requires 12 credits:

Code	Title	Hours
BIOL 121	Cell Biology	4
CHEM 128	General Chemistry II	4
CSC 125	Introduction to Computer Science	4
Math 310 - Linear Algebra, is recommended but not required		

### CHEMICAL ENGINEERING CONCENTRATION

**Chemical Engineering Concentration** requires 16 credits:

Code	Title	Hours
BIOL 121	Cell Biology	4
CHEM 128	General Chemistry II	4
CHEM 341	Organic Chemistry I	4
CSC 125	Introduction to Computer Science	4

CHEM 342 - Organic Chemistry II, is recommended but not required

MATH 310 - Linear Algebra, is recommended but not required

### COMPUTER ENGINEERING CONCENTRATION

**Computer Engineering Concentration** requires 4 credits:

Code	Title	Hours
CSC 125	Introduction to Computer Science	4
CSC 225 - Fundamental Structure, is recommended but not required		
MATH 310 - Linear Algebra, is recommended but not required		

### ENVIRONMENTAL ENGINEERING CONCENTRATION

**Environmental Engineering Concentration** requires 20 credits:

Code	Title	Hours
BIOL 121	Cell Biology	4
CHEM 128	General Chemistry II	4
CHEM 341	Organic Chemistry I	4
CSC 125	Introduction to Computer Science	4
Humanities and/or Social Sciences course focusing on environmental issues		4
ESC 302 - Geology, is recommended but not required		
MATH 310 - Linear Algebra, is recommended but not required		

### ELECTRICAL ENGINEERING CONCENTRATION

**Electrical Engineering Concentration** requires 4 credits:

Code	Title	Hours
CSC 125	Introduction to Computer Science	4
MATH 310 - Linear Algebra, is recommended but not required		

### MECHANICAL ENGINEERING CONCENTRATION

**Mechanical Engineering Concentration** requires 8 credits:

Code	Title	Hours
CSC 125	Introduction to Computer Science	4
PHYS 314	Classical Mechanics	4
MATH 310 - Linear Algebra, is recommended but not required		
PHYS 234 - Introduction to Materials Science, is recommended but not required		

### SYSTEMS-SCIENCES AND ENGINEERING CONCENTRATION

**Systems-Sciences and Engineering Concentration** requires 4 credits:

Code	Title	Hours
CSC 125	Introduction to Computer Science	4
MATH 310 - Linear Algebra, is recommended but not required		

### Degree and Graduation Requirements

In addition to the program-specific requirements listed above, all students must complete the graduation requirements specified for their degree. See the Degree and Graduation Requirements (<https://catalog.concordiacollege.edu/undergraduate-academic-community/degree-graduation-requirements/>) section for more information.