

# DUAL DEGREE ENGINEERING PROGRAM (PARTNERSHIP WITH NDSU)

## Major Requirements

The requirements for major in **Applied Science** are 44 credits:

Code	Title	Hours
CHEM 127	General Chemistry I	4
MATH 121	Calculus I	4
MATH 122	Calculus II	4
MATH 210	Linear Algebra	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

### Concentration

One concentration must be chosen from the following: 17-22

Agricultural Engineering	
Biosystems Engineering	
Civil Engineering	
Computer Engineering	
Construction Engineering	
Electrical Engineering	
Industrial Engineering & Management	
Manufacturing Engineering	
Mechanical Engineering	
<b>Total Hours</b>	<b>61-66</b>

## Concentrations for a Major in Applied Science

### Agricultural engineering concentration

**Agricultural Engineering Concentration** requires 22 credits:

Code	Title	Hours
CHEM 128	General Chemistry II	4
ENG 324	Technical Writing	4
or ENG 316	Business Writing	
Biology or Chemistry Electives		8
Tri-College Course		3
Tri-College Course		3

### BIOSYSTEMS ENGINEERING CONCENTRATION

**Biosystems Engineering Concentration** requires 22 credits:

Code	Title	Hours
BIOL 121	Cell Biology	4
CHEM 128	General Chemistry II	4
ENG 324	Technical Writing	4

Biology or Chemistry Elective	4
Tri-College Course	3
Tri-College Course	3

### Civil Engineering Concentration

**Civil Engineering Concentration** requires 21 credits:

Code	Title	Hours
CHEM 128	General Chemistry II	4
ENG 324	Technical Writing	4
ESC 302	Geology	4
Tri-College Course		3
Tri-College Course		3
Tri-College Course		3

### Computer Engineering Concentration

**Computer Engineering Concentration** requires 18 credits:

Code	Title	Hours
CSC 125	Introduction to Computer Science	4
CSC 225	Fundamental Structures	4
ENG 324	Technical Writing	4
Tri-College Course		3
Tri-College Course		3

### Construction Engineering Concentration

**Construction Engineering Concentration** requires 18 credits:

Code	Title	Hours
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CHEM 128	General Chemistry II	4
ENG 324	Technical Writing	4
ESC 302	Geology	4
Tri-College Course		3
Tri-College Course		3

### Electrical Engineering Concentration

**Electrical Engineering Concentration** requires 17 credits:

Code	Title	Hours
ENG 324	Technical Writing	4
PHYS 234	Introduction to Materials Science	4
Tri-College Course		3
Tri-College Course		3
Tri-College Course		3

### Industrial Engineering and Management Concentration

**Industrial Engineering and Management Concentration** requires 20 credits:

Code	Title	Hours
CHEM 128	General Chemistry II	4
ENG 324	Technical Writing	4
Tri-College Course		3
Tri-College Course		3
Tri-College Course		3
Tri-College Course		3

### **Manufacturing Engineering Concentration**

**Manufacturing Engineering Concentration** requires 20 credits:

<b>Code</b>	<b>Title</b>	<b>Hours</b>
CHEM 128	General Chemistry II	4
ENG 324	Technical Writing	4
Tri-College Course		3
Tri-College Course		3
Tri-College Course		3
Tri-College Course		3

### **Mechanical Engineering Concentration**

**Mechanical Engineering Concentration** requires 20 credits:

<b>Code</b>	<b>Title</b>	<b>Hours</b>
CHEM 128	General Chemistry II	4
PHYS 234	Introduction to Materials Science	0-4
Tri-College Course		3
Tri-College Course		3
Tri-College Course		3
Tri-College Course		3