

University core

Engineering Basics

Analysis + Design

**PHYS 211X**  
Physics 1  
Spring, Fall

**PHYS 212X**  
Physics 2  
Spring, Fall

**MATH 251X**  
Calculus 1  
Spring, Fall

**MATH 252X**  
Calculus 2  
Spring, Fall

**CHEM 105X**  
Chemistry I  
Spring, Fall

**CHEM 106X**  
Chemistry II  
Spring, Fall

**WRTG 111X**  
Writing Across Contexts  
Spring, Fall

**WRTG 211X\***  
Academic Writing  
Spring, Fall

**COJO 1X1X\***  
Oral Communication  
Spring, Fall

\*choose from a suite of classes

**LS 101**  
Library Info and Research  
Spring, Fall

## General Education Requirements (GER)

18 credits  
Spring, Fall

Arts	3
Humanities	3
Social Science	6
Additional	3**
Arts, Humanities, or Social Science	3
Ethics	3

\*\*includes ANT requirement

**MATH 253X**  
Calculus 3  
Spring, Fall

**MATH 302**  
Differential Equations  
Spring, Fall

**ES 100X + ES 100L**  
Engineering Alaska & Makerspace  
Spring, Fall

**DRT 210**  
Intermediate CAD  
Spring, Fall

**DRT 150**  
Civil Drafting  
ADW (Spring typ.)

**ES 201**  
Computer Techniques  
Spring, Fall

**ES 208**  
Mechanics  
Spring, Fall

**ES 341**  
Fluid Mechanics  
Spring, Fall

**CE 112**  
Elementary Surveying  
Spring

**CE 302**  
Fundamentals of Transportation  
Spring

**CE 331**  
Structural Analysis  
Spring

**ES 331**  
Mechanics of Materials  
Spring, Fall

**CE 334**  
Properties of Materials  
Spring

**GE 261**  
General Geology for Engineers  
Spring

**CE 405**  
Design of Highways and Streets  
Fall (even years)

**CE 408**  
Transportation Safety Analysis  
Fall (odd years)

**CE 409**  
Pavement Design  
Fall

**CE 433**  
Reinforced Concrete Design  
Spring

**CE 434**  
Timber Design  
Fall (odd years)

**CE 407**  
GIS in Civil Eng  
Fall (ADW)

**CE 432**  
Steel Design  
Fall

**CE 445**  
Hydrologic Analysis and Design  
Spring

**CE 420**  
Groundwater Engineering  
Fall

**CE 442**  
Water and Wastewater Treatment Design  
Spring

**ENVE 446**  
Biological Unit Processes  
Spring (even years)

**CE 443**  
Air Pollution Management  
Spring (odd years)

**CE 326**  
Intro Geotechnical Engineering and Foundations  
Fall

**CE 422**  
Foundation Engineering  
Fall (ADW)

**GE 440**  
Slope Stability  
Fall (odd years)

**ES 301**  
Engineering Analysis  
Spring, Fall

**GE 441**  
Geohazard Analysis  
Fall (even years)

**ESM 450\***  
Economic Analysis and Operations  
Fall

**ME 441**  
Heat & Mass Transfer  
Fall

**CE 424**  
Permafrost Engineering  
Spring

**CE 401\***  
Arctic Engineering  
Fall

Please note: This is a flowchart, not a timeline!

Updated Mar 2024

+ Complete 12 credits of technical electives from at least two emphasis areas. Consult with your CE advisor to ensure this program requirement is being met correctly.

**CE 438\*\*\*\***  
Design of Eng. Systems  
Spring

\*requires senior standing in CE

\*\*\*\*Has other CE elective requirements. Consult with your CE advisor.

Transportation

Structural

Water Resources

Environmental

Geotechnical

Arctic

Construction Management