

# Early-Entry Pathway

Welcome to North Dakota State University's Early-Entry Pathways program.

## MECHANICAL ENGINEERING

If you are interested in a degree in mechanical engineering, you can take early-entry courses to get started on this degree. Early-entry courses listed meet the requirements or electives of this major. These courses may be used to meet your general education requirements as well. We suggest you also review the list of recommended general education courses.

### Calculus I

MATH 165 | 4 credits  
General Education Category: R

Limits, continuity, differentiation, Mean Value Theorem, integration, Fundamental Theorem of Calculus and applications.  
Prereq: MATH 105, MATH 107 or placement.

### College Composition I

ENGL 110 | 3 credits  
General Education Category: C

Guided practice in the reading and writing of various genres for different situations and audiences. Includes research on the web and in the library. Prereq: English placement.

### General Chemistry I

CHEM 121 | 3 credits  
General Education Category: S

Matter, measurement, atoms, ions, molecules, reactions, chemical calculations, thermochemistry, bonding, molecular geometry, periodicity, and gases. Prereq or Co-req: MATH 103, MATH 107 or Math placement.

### Intro To Mechanical Engineering

ME 111 | 2 credits  
General Education Category: Does not meet NDSU's general education requirements.

This course introduces students to the field of mechanical engineering, the Mechanical Engineering degree program at NDSU, and potential career opportunities in the discipline through the use of hands-on, project-based learning experiences in multi-member teams addressing traditional and newly emerging topics in the field of mechanical engineering, including computer aided design, solid mechanics, fluid dynamics, thermodynamics, materials selection, instrumentation and data analysis in the context of problem-solving and design. Prereq: Acceptance into the Pre-Mechanical Engineering major.

### Calculus II

MATH 166 | 4 credits  
General Education Category: Does not meet NDSU's general education requirements.

Applications and techniques of integration; polar equations; parametric equation; sequences and series, power series. Prereq: MATH 165.

### College Composition II

ENGL 120 | 3 credits  
General Education Category: C

Advanced practice in reading and writing of various genres for different situations and audiences. Includes field research, collaboration, and visual communication. Prereq: ENGL 110 or placement.

### General Chemistry II

CHEM 122 | 3 credits  
General Education Category: S

Intermolecular forces, liquids, solids, kinetics, equilibria, acids and bases, solution chemistry, precipitation, thermodynamics, and electrochemistry.  
Prereq: CHEM 121.

### Fundamentals of Visual Communication For Engineers

ME 212 | 3 credits  
General Education Category: Does not meet NDSU's general education requirements.

Visual communications for design and manufacturing, computer-aided drawing and design, three-dimensional modeling and orthographic projections, geometric dimensioning and tolerancing, ASME Y14.5 1994 standard, sketching, parametric modeling, drawings and assemblies.

### Engineering Mechanics I

ME 221 | 3 credits  
General Education Category: Does not meet NDSU's general education requirements.

Scalar and vector approaches to trusses, frames and machines, internal forces, friction forces, center of gravity, centroid, and moment inertia. Prereq: MATH 165.

