

2024-2025

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

CORE CURRICULUM (32 credits)

Total core curriculum credit requirement is 52 credits. 20 credits worth of pre-requisite and engineering major courses count towards the core curriculum requirement.

Cornerstone Seminar – 4 cr.
Biblical Studies – 4 cr.
Global Histories – 4 cr.
Health and Well-being – 2 cr.
Modern Language – 4 cr.

Life Science – 2 cr.
Culture and Society – 4 cr.
Christian Life and Thought – 4 cr.
Arts & Aesthetics – 2 cr.
Writing Intensive – 2cr.

MAJOR (92 credits)

Math and Science Pre-requisites and Supporting courses (32 credits)

*MATH 1510 Calculus I – 4 cr.
*MATH 1520 Calculus II – 4 cr.
*CHEM 1150 General Chemistry I – 4 cr.
*PHEN 1210 Introductory Physics I – 4 cr.
PHEN 1220 Introductory Physics II – 4cr.
MATH 2030 Differential Equations – 4 cr.
PHEN 2220 Engineering Math and Programming – 4 cr.
MATH 3050 Vector Calculus / MATH 3010 Linear Algebra – 4 cr.

Mechanical Engineering courses for major (60 credits)

PHEN 1330 Mechanical Comprehension – 2 cr.
PHEN 1135 Intro to Fabrication Skills I – 2 cr.
PHEN 1165 Intro to Fabrication Skills II – 2 cr.
*PHEN 1410 Engineering Ethics – 2 cr.
PHEN 2310 Computational Tools for Engineering – 2 cr.
*PHEN 2535 Intro to Material Science – 4 cr.
PHEN 2550 Engineering Statics – 4 cr.
PHEN 2560 Dynamics – 4 cr.
PHEN 2625 Electronics – 4 cr.
PHEN 3540 Mechanics of Materials – 4 cr.
PHEN 3715 Engineering Thermodynamics – 4 cr.
PHEN 3725 Fluid Mechanics – 4 cr.
PHEN 4010 Fourth Year Seminar – 2 cr.
PHEN 4020 Engineering Economics – 2 cr.
PHEN 4310 Design Thinking – 2 cr.
PHEN 4330 Machine Design and Analysis – 4 cr.
PHEN 4610 Systems – 4 cr.
PHEN 4755 Heat and Mass Transfer – 4 cr.
*PHEN 4990 Engineering Capstone Project – 4 cr.

**Satisfies major and core curriculum requirements.*

The numbering scheme for PHEN courses:

- First digit of the course number specifies the year of course offering. 1 = Freshman Courses, 2 = Sophomore Courses, 3 = Junior Courses and 4 = Senior courses
- Second digit of the course number specifies the course category: 0 – general courses, 1 – manufacturing/fabrication, 2 – physics and program prerequisites, 3 – design / computational, 4 – core curriculum offering, 5 – materials/mechanics, 6 – controls / systems, 7 – thermal / fluids. 9 – capstone project
- Third digit of the course number specifies the fall/spring offering: Odd numbers = fall semester, even numbers = spring semester.
- Fourth digit of the course number specifies the use of lab: 0 = No lab included, 5 = Lab included

GRADUATION REQUIREMENTS

Credit Requirements: NPU requires a minimum of 120 credits for graduation. The Bachelor of Science in Mechanical Engineering course plan requires 124 credits including core curriculum, math and science prerequisites, supporting courses, and mechanical engineering courses. This requirement includes a minimum of 30 credits of basic math and college-level science courses and a minimum of 45 credits of mechanical engineering course credits.

Capstone Project: All Bachelor of Science in Mechanical Engineering graduates are required to complete a senior capstone design project worth 4 credits, where students apply their engineering knowledge to solve real-world problems, often working in teams to design, test, and refine engineering solutions.

GPA Requirements: NPU requires students to maintain a minimum cumulative GPA of 2.0 or higher in both general coursework and major-specific courses.