# MANUFACTURING AND DESIGN ENGINEERING DEGREE

Students must also complete the Undergraduate Registration Requirement ([here](https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement/)) and the degree requirements of their home school.

## Course Title Requirements (48 units)

### Core Courses (32 units) ¹

- 4 mathematics courses ([here](https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext))
- 4 engineering analysis and computer proficiency courses ([here](https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext))
- 4 units of basic science:
  - PHYSICS 135-2 & PHYSICS 135-3 & PHYSICS 136-2 & PHYSICS 136-3: General Physics and General Physics Laboratory
  - CHEM 131-0 & CHEM 141-0: General Chemistry 1 and General Chemistry Laboratory 1
  - or CHEM 151-0 & CHEM 161-0: Accelerated General Chemistry 1 and Accelerated General Chemistry Laboratory 1
  - or CHEM 171-0 & CHEM 181-0: Advanced General Inorganic Chemistry and Advanced General Inorganic Chemistry Laboratory

### Design and communications courses ([here](https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext))

- 3 design and communications courses:
  - DSGN 384-1 & DSGN 384-2: Interdisciplinary Design Projects I and II
  - DSGN 386-0: Manufacturing Engineering Design (must be taken in the final spring quarter before graduation)

### Technical electives:

- 2 200-level or 300-level engineering courses.
- 2 300-level engineering courses.

Courses numbered 395 will need a petition.

Students may only count up to two 399 course towards their tech electives.

¹ See general requirements ([here](https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)) for details.

² PHYSICS 125-2 General Physics for ISP or PHYSICS 140-3 Fundamentals of Physics may be substituted for PHYSICS 135-2 General Physics.

³ PHYSICS 126-2 Physics for ISP Laboratory or PHYSICS 136-2 General Physics Laboratory and PHYSICS 126-3 Physics for ISP Laboratory or PHYSICS 136-3 General Physics Laboratory.

³ IEMS 303-0 Statistics may be substituted if an additional math course, such as IEMS 202-0 Probability, is also taken.