

# Reliability Engineering

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## Department Information

- **Department Web Site:**  
[www.ndsu.edu/ime/](http://www.ndsu.edu/ime/) (<http://www.ndsu.edu/ime/>)
- **Credential Offered:**  
Minor
- **Official Program Curriculum:**  
[catalog.ndsu.edu/undergraduate/program-curriculum/reliability-engineering/](http://catalog.ndsu.edu/undergraduate/program-curriculum/reliability-engineering/) (<http://catalog.ndsu.edu/undergraduate/program-curriculum/reliability-engineering/>)

Students majoring in any engineering discipline are eligible and may choose a minor in Reliability Engineering. Reliability engineering focuses on assessment of product/system design for the dependability of a system or component to function under varying operating conditions for specified time periods. Fundamentally, it deals with the elimination or reduction of uncertainty and risks resulting in an improved reliability and reduction of failures. Cost elements of failed systems include costs of downtime, repair costs, idle personnel, warranty costs and the cost of maintaining spares and replacement inventory. Engineers must identify the cause of failures, correct the causes, and determine ways to deal with failures that have occurred, and ultimately change the design or design process to reduce the frequency of failures in new systems or components. Students completing a minor in Reliability Engineering will develop a better understanding of statistical analysis, reliability and risk modeling, failure analysis, and design testing and optimization tools. Major manufacturing employers are looking to hire engineers that have a better understanding of these tools and skill sets.

The Reliability minor requires completion of 18 credits of which at least 12 must be in addition to the credits applied to the major. There are 9 required courses and 9 elective courses. Interested students are encouraged to visit with relevant faculty in the IME Department for advice on course selection to best suit their career interests. Students must have a declared major in any of the engineering disciplines to elect a minor in Reliability Engineering.