

NON-DESTRUCTIVE EVALUATION MINOR

Minor supervised by an interdisciplinary faculty committee, administered by Materials Science and Engineering. The NDE minor is a unique opportunity for engineering students to acquire a multidisciplinary engineering qualification in the rapidly evolving field of Nondestructive Evaluation.

Undergraduate Study

Students interested in completing the NDE engineering minor must be enrolled in the College of Engineering at Iowa State University. They must submit a "Curriculum Change" form and complete the minimum prescribed 16 credit-hours of course work defined below. Acceptance is based on approval by the administering department, Materials Science and Engineering.

A combined average grade of C or higher is required in courses applied to the minor. The minor must include at least 9 credits that are not used to meet any other department, college, or university requirement.

The course requirements for the undergraduate minor in NDE are:

MAT E/E M 362	Principles of Nondestructive Testing	3
MAT E/E M 362L	Nondestructive Testing Laboratory	1
At least one of the following NDE specific courses		3-4
C E 449	Structural Health Monitoring	
E M 480	Ultrasonic Nondestructive Evaluation	
MAT E 485X	Penetrating Radiation Methods in Nondestructive Evaluation	
MAT E 488	Eddy Current Nondestructive Evaluation	
M S E/E M 550	Nondestructive Evaluation	

Independent Study courses on NDE projects from other engineering disciplines will need to be approved by the NDE Minor Coordinator

AER E 490J	Aerospace Engineering Independent Study: Non-destructive Evaluation (Research Topic related to NDE for any 490)
or E E 490	Independent Study
or M E 490	Independent Study
or MAT E 490	Independent Study

Up to three of the following or additional NDE specific courses from the list above 9-12

AER E 321	Flight Structures Analysis
AER E 421	Advanced Flight Structures
AER E 422	Vibrations and Aeroelasticity
AER E 423	Composite Flight Structures

AER E 426	Design of Aerospace Structures
CPR E 418	High Speed System Engineering Measurement and Testing
E E 224	Signals and Systems I
E E 418	High Speed System Engineering Measurement and Testing
E M 424	Intermediate Mechanics of Materials
E M 425	Introduction to the Finite Element Method
I E 348	Solidification Processes
I E 361	Statistical Quality Assurance
M E 417	Advanced Machine Design
M E 418	Mechanical Considerations in Robotics
MAT E 418	Mechanical Behavior of Materials
MAT E 443	Physical Metallurgy of Ferrous Alloys
MAT E 444	Corrosion and Failure Analysis
STAT 231	Probability and Statistical Inference for Engineers
STAT 305	Engineering Statistics
STAT 322	Probabilistic Methods for Electrical Engineers

Total Credits 16-20