

INDUSTRIAL ENGINEERING AND MANAGEMENT SCIENCES PHD

- **Other:** at least one experience as an instructor or teaching assistant; satisfy TGS English proficiency requirement

Degree Requirements

The following requirements are in addition to, or further elaborate upon, those requirements outlined in The Graduate School Policy Guide (<https://catalogs.northwestern.edu/tgs/academic-policies-procedures/>).

Master's

Those students enrolled in the IEMS PhD program receive the MS as they progress toward the PhD. For students who are progressing to the PhD, the master's degree is generally awarded upon completion of the following:

Total Units Required: 12

Course	Title
First Year Core Courses	
IEMS 401-0	Applied Mathematical Statistics
IEMS 435-0	Stochastic Simulation
IEMS 450-1	Mathematical Optimization I
IEMS 450-2	Mathematical Optimization II
IEMS 460-1	Stochastic Processes I
OPNS 516-0	Stochastic Foundations
Electives (6)	

Other MS Degree Requirements

- Examination on a research paper at end of first year

PhD

Total Units Required: 17

Course	Title
First Year Core Courses	
IEMS 401-0	Applied Mathematical Statistics
IEMS 435-0	Stochastic Simulation
IEMS 450-1	Mathematical Optimization I
IEMS 450-2	Mathematical Optimization II
IEMS 460-1	Stochastic Processes I
OPNS 516-0	Stochastic Foundations
Other Required Courses	
IEMS 481-0	Logistics
IEMS 482-0	Operations
Program of Coursework	
Courses in major area (at least four)	
Courses in two minor areas (two each)	
IEMS 4xx Elective Course	

Other PhD Degree Requirements

- **Examinations:** candidacy examination on a research paper at end of first year
- **Prospectus:** Initial part of dissertation research, to be completed by the end of the third year in the program.
- **PhD Dissertation:** based on independent research
- **Final Evaluations:** oral defense of dissertation