INDUSTRIAL ENGINEERING - MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING (ONLINE)

The Department of Industrial Engineering offers a Master of Science (M.S.) in Industrial Engineering with focus areas of manufacturing, operations research, and engineering management. Students may choose one of two options for completing their M.S. degree and the requirements for each option are listed below:

- **Thesis option:** 24 credits of coursework plus 6 credits of I E 599 Master's Thesis.
- **Project Option:** 27 credits of coursework plus 3 credits of I E 598 Special Research Programs.

Whether students write a thesis or complete a project, the program of study leading to the M.S. degree consists of 30 credits. At least 50% of the coursework must be taken from the Approved IE Department Course List. This means that students can take up to five electives from engineering disciplines outside the department and/or other areas of interest outside the college.

Note that NMSU reserves the right to change the program requirements without prior notice. Information in the NMSU Graduate Catalog takes precedence over any other information.

Admission

Students seeking regular admission to graduate study in Industrial Engineering must meet departmental admission requirements in addition to those of the Graduate School (https://catalogs.nmsu.edu/nmsu/graduate-school/). The departmental requirements are listed below:

- A student holds a bachelor's degree in Engineering from a school accredited by the Accreditation Board for Engineering and Technology (ABET) and has taken a course in calculus-based probability and statistics, or a student holds a bachelor's degree from an accredited school and meets the math prerequisites of the Department of Industrial Engineering. The prerequisites are: 9 hours in calculus; 3 hours in differential equations; and 3 hours in calculus-based probability and statistics. All students must have a grade point average of 3.0 or above (based on A=4.0) during their last 60 hours of undergraduate study.
- You must write a statement of intent describing your intended research. This statement should be 200-300 words and should discuss your graduate research interests and suggest a faculty member who might advise your research. Refer to the research interests of IE graduate faculty for possible advisors. You will not be admitted if you do not submit this statement, as it is part of your application for admission.

Note that up to 15 credits may be transferred if the student was enrolled in an approved graduate program. An applicant should meet or correspond directly with the IE graduate faculty as a first step in determining his or her specific admission status.

Procedure

Upon being admitted to graduate work in the department, the student will be assigned a temporary advisor until a permanent advisor is selected. Students should contact the department prior to the time of registration, so that preliminary advising can be done without pressure or haste.

Selection of Advisor

During the first 12 credit hours in the Industrial Engineering Graduate Program, all master's degree students must select a permanent advisor. This must be done prior to registration for the fifth course that the student takes. In selecting an advisor, the student should communicate with several members of the IE graduate faculty to discuss specific program objectives. The student should also use these contacts to become familiar with faculty research projects that are currently in progress. The faculty member must consent to serve as the student's advisor in writing. A list of the department graduate faculty along with their areas of interest is found on the IE web page (https://ie.nmsu.edu/).

Prefix	Title	Credits
Mater's Thesis		**6**
I E 599	Master's Thesis	
Master's Project		**3**
I E 598	Special Research Programs	
Approved IE Department Course List (Note that courses are listed under their area of primary focus but may address other areas. See course descriptions for more details.)		
Operations Research		
I E 515	Stochastic Processes Modeling	
I E 522	Queuing Systems	
I E 525	Systems Synthesis and Design	
I E 533	Linear Programming	
I E 534	Nonlinear Programming	
I E 535	Discrete Optimization	
I E 567	Design and Implementation of Discrete-Event Simulation	
Applied Statistics		
I E 460	Evaluation of Engineering Data	
I E 466	Reliability	
I E 545	Characterizing Time-Dependent Engineering Data	
Design and Manufacturing		
I E 478	Facilities Planning and Design	
I E 524	Advanced Production and Inventory Control	
I E 571	Advanced Quality Control	
I E 575	Advanced Manufacturing Processes	
Engineering Management		
I E 523	Advanced Engineering Economy	
I E 530	Environmental Management Seminar	
I E 537	Large Scale Systems Engineering	
I E 561	Advanced Safety Engineering	
I E 563	Topics in Engineering Administration	
Depending on contents, the following two courses are applicable to any of the above four areas:		
I E 505	Directed Readings	
I E 590	Selected Topics	
Optional Electives [1]		
E E 500-level (With approval of advisor and instructor)		
M E500-level (With approval of advisor and instructor)		
C E 500-level (With approval of advisor and instructor)		

ACCT 500-level (With approval of advisor and instructor)	
BCIS 500-level (With approval of advisor and instructor)	
BFIN 500-level (With approval of advisor and instructor)	
MGMT 500-level (With approval of advisor and instructor)	
C S 500-level (With approval of advisor and instructor)	
A ST 500-level (With approval of advisor and instructor)	

[1] The optional courses outside the department and/or the college should be previously approved by the academic advisor. See your advisor for more detailed information about selecting elective courses.

Requirements for Graduation

Students must schedule a final examination during their final semester per the guidelines of the Graduate School.

New Mexico State University master's accelerated program provides **the opportunity for academically qualified undergraduate students** to begin working on a master's degree **during their junior and senior years** while completing a bachelor's degree. Typically, a bachelor's degree requires four years to complete, and a master's degree requires an additional two years. The master's accelerated programs allow students the opportunity to complete a graduate program in an accelerated manner. Students can take up to 12 credits of approved I E courses and get dual course credit that can be applied to both an undergraduate and master's degree. You can also check NMSU's catalog for additional information about our programs.

MAP Requirements

- The graduate school allows qualified junior or senior students to substitute their graduate courses for required or elective courses in an undergraduate degree program, and then subsequently count those same courses as fulfilling graduate requirements in a related graduate program.
- Undergraduate students may apply for acceptance to the accelerated master's program after completing 60 semester hours of undergraduate coursework of which a minimum of 25 semester credit hours must be completed at NMSU.
- The grade point average must be at a minimum of 2.75.
- Students must receive a grade of B or higher in this coursework to be counted for graduate credit. If a B- or lower grade is earned, it will not count toward the graduate degree.

Accepted MAP Courses

The following courses are accepted for use in the MAP program, any other I E 500+ courses may be considered after a consultation with an advisor. An exception will need to be made to the degree audit for the additional course(s) to be included in both the undergraduate and graduate degrees.

Prefix	Title	Credits
I E 451	Engineering Economy	3
I E 456	Large Scale Systems Engineering	3
I E 459	Systems Thinking and Decision Making	3
I E 460	Evaluation of Engineering Data	3
I E 466	Reliability	3
I E 467	Discrete-Event Simulation Modeling	3
I E 478	Facilities Planning and Design	3
I E 490	Selected Topics	3
I E 515	Stochastic Processes Modeling	3
I E 522	Queuing Systems	3
I E 523	Advanced Engineering Economy	3
I E 524	Advanced Production and Inventory Control	3
I E 525	Systems Synthesis and Design	3
I E 533	Linear Programming	3
I E 534	Nonlinear Programming	3
I E 535	Discrete Optimization	3
I E 537	Large Scale Systems Engineering	3
I E 545	Characterizing Time-Dependent Engineering Data	3
I E 561	Advanced Safety Engineering	3
I E 563	Topics in Engineering Administration	3
I E 567	Design and Implementation of Discrete-Event Simulation	3
I E 571	Advanced Quality Control	3
I E 575	Advanced Manufacturing Processes	3
I E 590	Selected Topics	3
E T 452	Advanced Automated Control Systems	3
E T 456	Applied Power Technologies II	3
E T 472	Intelligent Transportation Systems (ITS)	3
E T 480	Innovation and Product Development	3
E T 483	Mobile App Programming and Development	3
E T 490	Selected Topics	1-3