INDUSTRIAL ENGINEERING - MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING

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.

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 E 500-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)		
ECON 500-level (With approval of advisor and instructor)		
C S 500-level (With approval of advisor and instructor)		
MATH 500-level (With approval of advisor and instructor)		
STAT 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

It is the responsibility of the student to complete all forms before submitting them to the IE department. Blank forms will not be accepted.

1. **Application for Diploma (Degree)** At the start of the semester in which you are to graduate you must file an Application for Diploma (Degree) and fee with the NMSU Registrar Office. To find the application as well as deadlines, log onto MyNMSU (https://my.nmsu.edu/) and click on the Student and Financial Aid tab, then under QuickLinks select Student Records. Filing dates are on the Graduate School Calendar that is maintained on the Graduate School website.
2. **Program of Study** – After completing 12 NMSU credits of graduate coursework, every student is required to complete a form entitled "Program of Study for Masters Students", and submit it to their advisor. This form is found on the NMSU Graduate School (https://gradschool.nmsu.edu/) web page: Under the "Current Students" pull-down menu at the top, choose "Graduate Forms". A final version of this form must be submitted to the Graduate School during the student's final semester.
3. **Schedule Your Master's Exam** – Whether you write a thesis, complete a project, or take all coursework, you must schedule a final examination during the last semester of your coursework/research. Examination committee rules are in the Graduate Catalog: You should plan to have your adviser, a second IE graduate faculty

member, and an external (outside the IE department) faculty member. The external member will also serve as the Dean of the Graduate School's Representative. To ensure that a Faculty Member is currently a member of the Graduate Faculty and their appointment expiration date please visit the Graduate Faculty & Staff Directory on the Graduate School (https://gradschool.nmsu.edu/) web page: Under the "Faculty and Staff" pull-down menu at the top, choose "Graduate Faculty & Staff Directory". The schedule dates are found on the Graduate School (https://gradschool.nmsu.edu/) web page: Under the "Current Students" pull-down menu at the top, choose "Graduate School Calendar".

4. **Other Forms** – Additional forms can be found on the Graduate School website (http://gradschool.nmsu.edu/).

To schedule and take your exam:

- Schedule a 2-hour time block that is convenient for you and your selected faculty committee. **Students are responsible for contacting and scheduling their committee members.**
- Schedule use of the IE Conference Room, Room 279 EC III, with the Industrial Engineering Secretary. At that time, if you are presenting a project or thesis, schedule the use of any equipment you may require such as the In Focus projector, laptop, etc.
- Complete the Masters Final Examination Form. The exam form is also available on the Graduate School (https://gradschool.nmsu.edu/) website. You must schedule your exam a minimum of 10 working days in advance. This means your form must be at the Graduate School at that time.
- Consult with your adviser to discuss your examination. This can be by phone or e-mail.
- Be on time for your examination. If you're using equipment for presenting research, you should arrive early to set up.

Please plan to attend, with your family and friends, the College of Engineering's Sociedad de Ingenieros ceremony that is held to recognize our engineering graduates. This ceremony is held the Friday evening before Graduation.

New Mexico State University's 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 credits 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 its 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 grade of B- or lower 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 in order for the additional course(s) to be included on 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