

Navajo Technical University

Name: _____

ID#: _____

Master of Science – Industrial Engineering

Industrial Engineering is a branch of engineering that focuses on the optimization of complex processes and systems, and it is key for the manufacturing operations. It prepares graduates to apply scientific and mathematical principles in the design, improvement of integrated systems of people, material, information energy, and equipment.

The NTU master's degree in industrial engineering is a rigorous program designed for individuals with an undergraduate background in engineering or related fields. It provides a competitive edge in the job market and typically takes about four years to complete. This comprehensive program equips graduates with theoretical knowledge and practical skills necessary to address and solve complex industrial challenges, driving innovation and efficiency across various industries.

Each student in the MSIE program should take at least six credit (6) hours from the student's area of concentration. The master's degree program in MSIE consists of four (4) concentrations, namely **operations research, manufacturing, statistics and quality control, and engineering management**. For instance, if a student opts for a thesis in manufacturing, the student must fulfill this requirement by taking six (6) credit hours from manufacturing concentration.

Semester One		Credits	Prerequisites	Semester	Grade
ENGR 501	Principles of Indigenous Engineering	3			
ENGR 503	Engineering Seminar	1			
IE 5XX	IE Concentration Course	3			
IE 5XX	IE Concentration Course	3			
Semester Two					
ENGR 503	Engineering Seminar	1			
IE 5XX	Concentration Course	3			
IE 5XX	Concentration Course	3			
Semester Three					
ENGR 503	Engineering Seminar	1			
IE 5XX	Concentration Course	3			
ENGR XXX	ENGR 502 or ENGR 504 or ENGR 505	3			
IE 699	Master's Thesis	3			
Semester Four					
IE 5XX	Concentration Course	3			
IE 699	Master's Thesis	3			
TOTAL CREDIT HOURS		33			

In addition, each student should take at least six credit (6) hours for his/her area of concentration.

IE course list for MS Program	
Areas of Concentration	Courses
Operations Research	IE 513 Data Analysis
	IE 515 Advanced Operation Research
	IE 517 Engineering Optimization
Manufacturing	IE 523 Additive Manufacturing
	IE 525 Advanced Manufacturing Processes
	IE 527 Advanced Quality Control

Statistics and Quality Control	IE 533 Reliability Engineering
	IE 535 Advanced Statistics
	IE 537 Advanced Quality Control
Engineering Management	IE 543 Systems Engineering Management
	IE 545 Advanced Production & Inventory Control
	IE 547 Manufacturing Facilities Planning & Design

	Signatures	Date
Student:		
Graduate Advisor:		
Registrar:		
Graduation Date:		