

PROGRAM EDUCATIONAL OBJECTIVES

Educational objectives describe the expected accomplishments of graduates during the first few years after graduation.

1. **Industrial Engineering Knowledge and Design Skills.**
Graduates should be able to support operational decision making and design solutions to address the complex and changing industrial engineering problems faced by organizations, using modern concepts and technology.
2. **Communication Skills.** Graduates should be able to communicate effectively, both orally and in writing, using electronic tools and graphical information.
3. **Teamwork and Leadership Skills.** Graduates should be able to serve as change agents in the organizations that employ them, based on strong interpersonal and teamwork skills, an understanding of professional and ethical responsibility and a willingness to take the initiative.

PROGRAM OUTCOMES

Program outcomes describe what students are expected to know and are able to do by the time of graduation, and are linked to the educational objectives described above.

1. **Industrial Engineering Knowledge and Design Skills**
 - a. An ability to identify, formulate, and solve industrial engineering problems.
 - b. An ability to design and conduct experiments, as well as to analyze and interpret data.
 - c. An ability to design and improve integrated systems of people, materials, information, facilities and technology.
 - d. An ability to apply core industrial engineering concepts, using the updated techniques, skills and tools necessary for industrial engineering practice.
 - e. The broad education necessary to understand the impact of engineering solutions in a societal context.
 - f. An ability to apply knowledge of mathematics, including statistics as well as integral and differential calculus.
 - g. An understanding of fundamental physical laws.

INDUSTRIAL ENGINEERING PROGRAM CHART

Note: This chart summarizes recommendations regarding course selection, sequencing, and timing. Students are encouraged to read the Program Distribution Requirements and Curriculum Guidelines for IE for more complete information. Students are also encouraged to arrange their programs to take advantage of global and cooperative education opportunities.

	FRESHMAN/SOPHOMORE	JUNIOR	SENIOR
COURSE RECOMMENDATIONS	Calculus Sequence MA 1021, MA 1022, MA 1023, MA 1024, MA 2051 Statistics Sequence MA 2611; MA 2612 or MA 2621 H&A Requirement Physics/Chemistry Sequence PH 1110, PH 1120, CH 1010; or PH 1110, CH 1010, CH 1020 CS 1101 or CS 1102 Start IE Core: OIE 2500 OIE 3400 CS 2118 Social Science 2 Math/Science Electives	IQP Complete IE Core: OIE 2850 OBC 2300 OIE 3401 OIE 3420 or OIE 3501 OIE 3460 Engineering Basics Outside IE 2 IE Electives: Choices: OIE 3405, OIE 3420, OIE 3450, OIE 3501, MIS 3720, OIE 4410, OIE 4460, MIS 4720, and OR courses in MA 1 Technical Elective Any engineering/science design course (see the IE web site for recommendations)	MQP 1 IE Elective 2 Technical Electives At least 3 Free Electives Complete any remaining degree requirements
DEGREE REQUIREMENTS	H&A Requirement (2 units)		
		IQP (1 unit)	
	Math/Science (4 units)		
		Industrial Engineering Topics (5 units)	
	Social Science (2/3 units)		MQP (1 unit)
		Free Electives (1 unit)	
		Physical Education (1/3 unit)	