

# SYSTEMS ENGINEERING (BRIDGE GRADUATE CERTIFICATE)

This program is designed for technical professionals with work experience and a degree in engineering. The program consists of twelve credits of coursework scheduled for completion by working engineers in two years. The certificate can serve as a bridge to the M.S. degree in Engineering Management or Industrial Engineering.

## Admission Requirements

Applicants must meet the requirements for admission to the Graduate School (<http://bulletins.wayne.edu/graduate/general-information/admission/>), and either the M.S. program in Industrial Engineering (<http://bulletins.wayne.edu/graduate/college-engineering/industrial-systems-engineering/>) or Engineering Management (<http://bulletins.wayne.edu/graduate/college-engineering/industrial-systems-engineering/>). They must hold a baccalaureate degree in engineering from an institution accredited by the Accreditation Board for Engineering and Technology (ABET). In addition, they must have earned a grade point average of at least 2.8 in the upper division of their undergraduate program or have at least three years of full-time engineering work experience.

## Requirements – Traditional Program

Students must complete fifteen credits consisting of one required foundation course in systems engineering; two core courses in systems engineering, one elective course, and a required capstone course.

As a bridge certificate, students may later apply all certificate credits toward Master's degree requirements in Engineering Management or Industrial Engineering, provided any such credits have been earned with a minimum 'B' grade and are within the six years time limit for completing the Master's degree.

**Graduation Requirements:** All course work must be completed in accordance with the regulations of the Graduate School (<http://bulletins.wayne.edu/graduate/general-information/academic-regulations/>) and the College of Engineering (<http://bulletins.wayne.edu/graduate/college-engineering/academic-regulations/>). Students may enroll on a full-time or part-time basis but must complete requirements within three years of admission.

Code	Title	Credits
SYE 6490	Introduction to Systems Engineering in Design	3
IE 6405	Integrated Product Development	3
IE 6720	Engineering Risk and Decision Analysis	3
Systems Engineering Capstone Course		3
IE 7995	Graduate Special Topics	
Select 3 Credits from the following courses:		3
IE 6125	Human Factors Engineering	
IE 6220	Value Engineering	
IE 6240	Quality Management Systems	
IE 6255	Quality Engineering	
IE 6275	Reliability Estimation	
IE 6425	Product Lifecycle Management and Sustainable Design	
IE 6840	Project Management	

IE 7480	Knowledge-Based Design
<b>Total Credits</b>	
	<b>15</b>

## Requirements – Online Program

This online program is designed for technical professionals with work experience and a degree in engineering. The program consists of twelve credits of online coursework followed by a required 3-credit capstone course for completion by working engineers in two years. The certificate is designed in accordance with the International Council on Systems Engineering (INCOSE) standards, the leading Professional Society in this space, in order to prepare those in the program for INCOSE certification exams.

Code	Title	Credits
SYE 6490	Introduction to Systems Engineering in Design	3
IE 6405	Integrated Product Development	3
IE 6720	Engineering Risk and Decision Analysis	3
IE 6840	Project Management	3
Systems Engineering Capstone Course		3
IE 7995	Graduate Special Topics	
Total Credits		15