SYSTEM ENGINEERING, MINOR

A minor in Systems Engineering is available for both Civil Engineering majors and non-departmental majors who would like an overview of the principles of systems engineering. Students wishing to pursue a minor in systems engineering must complete 18 credits in addition to the prerequisite courses, AS.110.108 Calculus I (Physical Sciences & Engineering), AS.110.109 Calculus II (For Physical Sciences and Engineering), EN.553.291 Linear Algebra and Differential Equations, and EN.500.113 Gateway Computing: Python & EN.500.132 Bootcamp: Java.

The minor consists of the following:

- three fundamental systems engineering courses
- three systems engineering elective courses

The information below describes the academic requirements for students entering JHU as degree-seeking students in Fall 2024. Students who entered JHU as degree-seeking students prior to Fall 2024 should view the appropriate archived catalogue *(*https://e-catalogue.jhu.edu/archive/*).*

MINOR PREREQUISITES

Code	Title	Credits
AS.110.108	Calculus I (Physical Sciences & Engineering)	4
AS.110.109	Calculus II (For Physical Sciences and Engineering)	4
EN.553.291	Linear Algebra and Differential Equations	4
or AS.110.201 & AS.110.302	Linear Algebra and Differential Equations and Applications	
EN.500.113 & EN.500.132	Gateway Computing: Python and Bootcamp: Java	4
or EN.500.112 & EN.500.133	Gateway Computing: JAVA and Bootcamp: Python	

MINOR REQUIREMENTS

The Systems Engineering minor requires 18 credits. A grade of C- or higher is required for all courses. No Satisfactory/Unsatisfactory (S/U) grade is accepted. Details of these requirements are as follows:

Fundamental Systems Engineering

Code	Title	Credits
EN.560.101	Civilization Engineered: Data-driven Solutions for Communities	3
EN.560.240	Uncertainty, Reliability and Decision-making	3
EN.560.250	Intro to Mathematical Decision Making	3
Total Credits		*9*

Systems Engineering Electives

Code	Title	Credits
Complete three courses from the following:		9
EN.560.355	Dynamical Systems	
EN.560.449	Energy Systems	
EN.560.450	Operations Research	
EN.560.453	An Introduction to Network Modeling	
EN.560.457	System Dynamics	
EN.560.458	Natural Disaster Risk Modeling	
EN.560.459	Production Systems Analysis	
Total Credits		*9*