

ANALYTICS FOR ENGINEERING DECISION MAKING (CERT)

This program was approved for students entering the university in the Summer 2025-Spring 2026 catalog year. For more information about catalog year, go to Catalog Year Information (<https://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Graduate Certificate in Analytics for Engineering Decision Making

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)
Department: Industrial (<https://engineering.louisville.edu/academics/departments/industrial/>)
Academic Plan Code(s): AEDMCGR, AEDMCGRO

Program Information

This program can be completed in a traditional classroom format or entirely online.

The graduate certificate in Analytics for Engineering Decision Making offers students training to address the growing need for analytics and data-driven decision making, at the regional and national level. The overall goal is to develop talent that is equipped with operational decision analytics skills, including both predictive and prescriptive skills. Students will be prepared to work for a wide range of organizations (businesses, non-profits, NGOs, etc.) in the U.S. Upon completion of the certificate, students will acquire core knowledge on data analytics in decision making and combines three sub-areas of Industrial Engineering (Data Analytics, Operations Research, and Decision Making).

The certificate will require students to complete 9 credit hours of graduate course work. Students in the Master of Science in Industrial Engineering (MSIE) and Master of Engineering Management (MEEMO) will be able to complete the certificate within their academic plan. Non-degree seeking students completing the certificate, will be able to apply the 9 credit hours towards their future MSIE and/or MEEMO degree.

Students will be required to maintain a 3.0 GPA in order to graduate.

Admission Requirements

The admission standards for the Graduate Certificate program in Analytics for Engineering Decision Making are as follows:

1. All admission applications for the Graduate Certificate program shall include the following:
 - a. Completed graduate application (<https://graduate.louisville.edu/admission/>) for the Graduate School,
 - b. Application fee,
 - c. Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
2. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution or current enrollment in a graduate Speed School program.
3. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale). Applicants with a

GPA between 2.5 and 2.75 may be considered for admission and will be required to submit additional application materials.

4. International students whose primary language is not English must show English language proficiency. Applicants must either submit an official TOEFL, IELTS or Duolingo score or demonstrate a degree award from an acceptable English language institution. The successful applicant will typically have a total TOEFL score of 79 or higher, an overall IELTS score of 6.5 or higher, or Duolingo score of 105 or higher.

Students enrolling in this graduate certificate program are required to be proficient in Calculus I.

Students can enroll in a Graduate Certificate program either as a non-degree seeking student or as a student simultaneously enrolled in a graduate degree program and this graduate certificate program. Students who wish to earn a graduate degree must meet all admission criteria for the degree program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

Program Requirements

Code	Title	Hours
ISE 662	Predictive Analytics for Decision Making I	3
Choose 6 hours from the courses below (each course is 3 hours):		6
ISE 561	Decision Support Systems	
ISE 663	Predictive Analytics for Decision Making II	
ISE 646	Operations Research Methods	
ISE 645	Systems Simulation	
Minimum Total Hours		9

The Certificate Program of Study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.

Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward a graduate certificate.