

# TRANSPORTATION AND LOGISTICS MINOR

Students are required to complete 7 courses, of which 1 is a required course. The other 6 courses must include at least 3 core courses. At least 2 of the 6 must be outside the school in which the student is majoring. No more than one course at the 200 level.

Students in the McCormick School may double-count a maximum of 2 courses from their major program toward the minor. Students from other schools are not allowed to double-count courses that are part of their major but may count courses that fulfill related course, distribution, foundation, or social science and humanities requirements.

## Prerequisites

In preparation for pursuing the minor, students should take courses in calculus and in probability and statistics.

## Minor Requirements (7 units)

- TRANS 310-0 Seminar in Transportation and Logistics (For WCAS students entering after Spring 2023, this class fulfills the WCAS Advanced Expression requirement.)
- 3 or more core courses
  - Chosen from the following:

Course	Title
CIV_ENV 304-0	Civil and Environmental Engineering Systems Analysis
CIV_ENV 371-0	Introduction to Transportation Planning and Analysis
CIV_ENV 376-0	Transportation System Operations
CIV_ENV 377-0	Choice Modelling in Engineering
ECON 310-1	Microeconomics
ECON 355-0	Transportation Economics and Public Policy
IEMS 310-0 or IEMS 313-0	Operations Research Foundations of Optimization
IEMS 381-0	Supply Chain Modeling and Analysis
IEMS 383-0	Service Engineering and Management

- 2 must be outside the student's major program.
- No substitutions are allowed.
- 3 additional courses selected from core courses or approved electives:
  - Approved electives include the following:

Course	Title
ANTHRO 373-0	Power and Culture in American Cities
ANTHRO 383-0	Environmental Anthropology
BUS_INST 331-0	Real Estate Finance & Investment
CIV_ENV 205-0 or BUS_INST 304-0 or ECON 360-1 or KELLG_FE 310-0	Economics and Finance for Engineers Corporate Finance Foundations of Corporate Finance Theory Principles of Finance
CIV_ENV 330-0	Engineering Project Management
CIV_ENV 368-0	Sustainability: The City
CIV_ENV 387-0	Design of Sustainable Urban Developments
EARTH 342-0	Contemporary Energy and Climate Change
ECON 309-0	Public Finance
ECON 337-0	Economics of State and Local Governments

ECON 349-0	Industrial Economics
ECON 350-0	Monopoly Competition & Public Policy
ECON 354-0	Issues in Urban and Regional Economics
ECON 361-0	International Trade
ECON 371-0	Economics of Energy
ECON 372-0	Environmental Economics
ECON 373-0	Natural Resource Economics
ECON 381-1	Econometrics
ECON 381-2	Econometrics
ENVR_SCI 390-0	Special Topics in Environmental Sciences Geographic Information Systems Level I or equivalent course
HISTORY 309-0	American Environmental History
HISTORY 322-2	Development of the Modern American City: 1880-Present
HISTORY 376-0	Global Environments and World History
HISTORY 382-0	The Modern Japanese City
IEMS 315-0	Stochastic Models
IEMS 317-0	Discrete Event Systems Simulation
IEMS 365-0	Analytics for Social Good
IEMS 382-0	Operations Engineering and Management
ISEN 220-0	Introduction to Energy Systems for the 21st Century
POLI_SCI 321-0	Urban Politics
POLI_SCI 329-0	U.S. Environmental Politics
SOCIOL 207-0	Cities in Society
SOCIOL 301-0	The City: Urbanization and Urbanism
SOCIOL 336-0	The Climate Crisis, Policies, and Society
1 unit of approved independent study	
Graduate Level Courses	
CIV_ENV 471-1	Transportation Systems Analysis 1
CIV_ENV 471-2	Transportation Systems Analysis 2
CIV_ENV 472-1	Transportation System Operations and Control 1: Urban Networks
CIV_ENV 472-2	Transportation System Operations and Control 2: Scheduled Modes and Real-Time
CIV_ENV 480-1	Travel Demand Analysis & Forecasting 1
CIV_ENV 480-2	Advances in Travel Demand Analysis and Forecasting
CIV_ENV 482-0	Evaluation and Decision Making for Infrastructure Systems
CIV_ENV 483-0	Infrastructure Systems Analysis
CIV_ENV 484-0	Advanced Theories of Traffic Flow
IEMS 481-0	Logistics
IEMS 482-0	Operations

- At least 2 of the core or elective courses must be outside the school in which the student is registered.
- Students in the McCormick School may double-count a maximum of 2 courses from their major program toward the minor. For Industrial Engineering Majors entering in Fall 2022 or later, CIV\_ENV 205-0 Economics and Finance for Engineers is required for the Major and is subject to the maximum of two courses that can be double counted between their Major and the Transportation and Logistics Minor.
- Students from other schools are not allowed to double-count courses that are part of their major but may count courses that fulfill related course, distribution, foundational or social science and humanities requirements.

- 4XX level courses require consent of the instructor and the Director of the Transportation and Logistics Program.

**TRANS 310-0 Seminar in Transportation and Logistics (1 Unit)** Yearlong senior seminar on the structure of the transportation and supply-chain industries and evaluation of relevant public policy. Students receive 1 credit in the spring quarter of their senior year. *Advanced Expression*

**TRANS 399-0 Independent Study (1 Unit)** Advanced work chosen by mutual agreement with a faculty member. Only 1 unit may count toward the minor. Consent of faculty required.