

Learning Analytics

Department of Human Development

M.S. PROGRAM

Major Code: LRAM



**Teachers College, Columbia University
2024-2025**

The Masters Program in Learning Analytics prepares students to understand and use emerging quantitative methods, drawn from computer science, statistics, and cognitive science, for handling the vast amounts of data generated by online and digital learning environments. Students complete coursework in learning analytics and educational data mining methods, tools, and theory over the course of a year of full-time study beginning in the fall semester and concluding in the summer. Part-time study for those working in related fields is also available.

In addition to learning about relevant policy, legal, and ethical issues involved in conducting analytics on educational data, students will be challenged to use learning analytics methods to improve learning opportunities for a range of student populations. Students in the Master of Science in Learning Analytics program work with real-world data collected from online and digital learning environments in the K-12 and post-secondary sectors.

The program includes face-to-face and online components and opportunities for individual instruction and advice. Students are encouraged to develop industry connections, which can result in internships and other experiential learning opportunities.

Required Program Core Courses: (minimum of 5 courses for 15 points/credits)

- HUDK 4050: Core Methods in Educational Data Mining
- HUDK 4051: Learning Analytics: Process and Theory
- HUDK 4052: Data, Learning, and Society OR HUDK 4011 Networked and Online Learning
- HUDK 4054: Managing Educational Data OR HUDK 4031 Data, Testing, and Meritocracy
- HUDK 5053: Learning Analytics Practicum

Additional Courses in Learning (HUDK): (minimum of 3 courses for 9 points/credits)

- Three courses with the HUDK prefix selected in consultation with your advisor.

Courses in Statistics (minimum of 2 courses for 6 points/credits) Also satisfies the College Breadth Requirement

- HUDM 4122 Probability and statistical inference OR HUDM 4125 Statistical inference
- HUDM 5122 Applied regression analysis

Students with prior coursework in statistics may place out of one or more statistics courses and consider these additional options

- HUDM 5026 Introduction to data analysis in R
- HUDM 5123 Linear models and experimental design
- HUDM 5124 Multidimensional scaling and clustering
- HUDM 5133 Causal inference for program evaluation
- HUDM 5199 Programming for data science

(Note that the two courses in statistics (HUDM) also satisfy the college breadth requirement.)

Elective Courses (minimum of 1 course for 2 points/credits)

- Other courses at Teachers College that are related to the program.

Capstone Project:

Students will complete an integrative capstone project, involving analytics on real-world educational data to solve a real-world problem or answer a real-world question.

For the M.S. degree, no transfer credit is granted for work completed at other universities.

Satisfactory Progress

Students are expected to make satisfactory progress toward the completion of degree requirements. If satisfactory progress is not maintained, a student may be dismissed from the program. Program faculty annually review each student's progress. Where there are concerns about satisfactory progress, students will be informed by the program faculty. If a student is performing below expectations, remedial work within an appropriate timeline may be required. If satisfactory progress is not maintained, a student may be dismissed from the program. Further policy details can be found in the Teachers College Student Handbook: <https://www.tc.columbia.edu/student-handbook/>

Full-time MLA Program

Students can apply for and be admitted to the full-time program in the fall semester only. This program takes up to 3 semesters of study.

Program Planning Worksheet 2024-2025			
Course #	Course Name	Term	Points
Program Core Courses (15 points):			
HUDK 4050	Core Methods in Educational Data Mining		3
HUDK 4051	Learning Analytics: Process and Theory		3
HUDK 4052 OR HUDK 4011	Data, Learning, and Society OR Networked and Online Learning		3
HUDK 4054 OR HUDK 4031	Managing Educational Data OR Data, Testing, and Meritocracy		3
HUDK 5053 OR HUDK 5324	Learning Analytics Practicum OR Research Work Practicum		3
Additional Courses in Learning (9 points):			
Courses with the HUDK prefix selected in consultation with an advisor.			
			3
			3
			3
Statistics (6 points total):			
Students with prior course work in statistics may place into higher level courses.			
HUDM 4122 OR HUDM 4125	Probability and Statistical Inference OR Statistical Inference		3
HUDM 5122	Applied Regression Analysis		3
Elective Courses (2 points total)			
Courses within Teachers College selected in consultation with an advisor			
			2
32 Points Required for the Degree		Total	
Capstone Integrative Project			
Capstone Completed?		Yes/No	

For International Students on Visas: Each semester you need to maintain 9 points for full time status. In your last semester, you will need a “Reduced Course load” form approved by the Program Director.

For all students: In your last semester, you will need to submit an “Intent to Graduate” form early in the semester.