

Learning Analytics

Department of Human Development

M.S. PROGRAM

Major Code: LRAM



**Teachers College, Columbia University
2020-2021**

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.

Studying with a faculty of internationally recognized experts, 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 emphasizes face-to-face components and opportunities for individual instruction and advice. The program has strong industry connections, which can result in internship opportunities and other experiential learning opportunities.

Required Program 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
- HUDK 5053: Feature Engineering Studio

Additional Program Courses: (minimum of 3 courses for 9 points/credits)

- HUDK 4029: Human Cognition and Learning
- HUDK 4080: Educational Psychology
- HUDK 5030: Visual Explanations
- HUDK 5035: Psychology of Media
- HUDK 5100: Supervised Research and Practice

Capstone Project:

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

College Breadth Requirement: (minimum of 2 courses for 6 points/credits)

In addition, a minimum of **six** points outside of HUDK are selected in consultation with an advisor. Some potential courses include:

- HUDM 4122 Probability and statistical inference
- HUDM 4125 Statistical inference
- HUDM 5026 Introduction to data analysis in R
- HUDM 5122 Applied regression analysis
- HUDM 5123 Linear models and experimental design
- HUDM 5124 Multidimensional scaling and clustering
- HUDM 5133 Causal inference for program evaluation
- ORLA 6641 Advanced topics in research methods and design
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- HUDM 4050 Introduction to measurement
- HUDM 5059 Psychological measurement
- A&HF 4090 Philosophies of education
- A&HF 4192 Ethics and education
- ITSF 4010 Cultural and social bases of education
- ITSF 5003 Communication and culture
- MSTU 4001 Technology and school change
- MSTU 5001 Assessing the impact of technology in our schools
- MSTU 4037 Computers and the uses of information in education
- MSTU 4083 Instructional design of educational technology
- MSTU 4085 New technologies for learning
- MSTU 4133 Cognition and computers
- MSTU 5035 Technology and metacognition

- MSTU 4022 Telecommunications, distance learning, and collaborative interchange
- MSTU 4039 Video games in education
- MSTU 4052 Computers, problem solving, and cooperative learning
- MSTU 5005 Case-based teaching and learning in electronic environments
- MSTU 5030 Intelligent computer-assisted instruction

Transfer Credit

At least 20 points must be earned in Teachers College courses. The remaining coursework, through Teachers College registration, may be completed in Teachers College or other graduate divisions of the University, but no more than 12 points of graduate credit from other faculties of the University will be credited toward the minimum point requirement. Graduate level courses in the University are numbered from 4000 and above.

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.

Typical Full Time Course Sequence

FALL	SPRING	SUMMER A	Summer B
HUDK 4050	HUDK 4051	HUDK 5053	Capstone Completion
HUDK 4052 or HUDK 4011	HUDK 4054	HUDK 5100	
HUDK 4029 or HUDK 4080	HUDK 5030 or HUDK 5035		
HUDM 4122	HUDM 5122		

For International Students on Visas: Each semester you need to maintain 12 points for full time status. In your last semester, you will need a “Reduced Course load” form signed 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.