This course introduces the concepts of artificial intelligence and machine learning to help construction students build data-driven solutions. Students will also learn to analyze multidimensional data and develop machine learning models in Python using datasets that are relevant to the CSM discipline. Differential Tuition: $165.

CSM 693. Construction Internship. (0-0) 3 Credit Hours.
Prerequisites: Graduate standing, 18 semester credit hours of graduate work, and consent of instructor. Supervised full-time construction work experience with public agencies or private companies. Individual conferences and written reports required. Differential Tuition: $165.

CSM 6951. Independent Study. (0-0) 1 Credit Hour.
Prerequisites: Graduate standing and permission in writing (form available) from the instructor and the Graduate Advisor of Record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours will apply to the degree. Differential Tuition: $55.

CSM 6953. Independent Study. (0-0) 3 Credit Hours.
Prerequisites: Graduate standing and permission in writing (form available) from the instructor and the Graduate Advisor of Record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours will apply to the degree. Differential Tuition: $165.

CSM 6973. Special Topics. (3-0) 3 Credit Hours.
Prerequisite: Graduate standing or consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Topics courses may be repeated for credit when topics vary, but not more than 6 hours of CSM 6973 or 12 hours of CSM 6976 will apply to the degree. Differential Tuition: $165. Course fees: STSE $30; SAP1 $25.

CSM 6976. Special Topics. (6-0) 6 Credit Hours.
Prerequisite: Graduate standing or consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Topics courses may be repeated for credit when topics vary, but not more than 6 hours of CSM 6973 or 12 hours of CSM 6976 will apply to the degree. Differential Tuition: $330.

CSM 7011. Construction Graduate Seminar. (1-0) 1 Credit Hour.
Will include presentations of current research by faculty invited guests who are experts in fields related to construction science and management, and advanced graduate students who are about to complete their dissertation research. May be repeated for credit. The grade report for the course is either "CR" (satisfactory) or "NC" (unsatisfactory). Differential Tuition: $55.

CSM 7103. Decision-Making in Construction Management. (3-0) 3 Credit Hours.
Decision processes can range from quantitative computational analysis to qualitative experiential evaluations. This course provides a set of practical tools and theoretical frameworks to help construction managers address the challenges of decision-making and problem-solving. Differential Tuition: $165.

CSM 7113. Resiliency within the Built Environment. (3-0) 3 Credit Hours.
This course provides students with the opportunity to obtain a thorough understanding of resiliency issues and its interrelation with the built environment by retrospectively investigating technological progress, addressing current issues, and contemplating on possible futures. Differential Tuition: $165.
CSM 7203. Research Methods. (3-0) 3 Credit Hours.
This course provides guidance on research formulation and methodologies adopted for scientific and engineering experiments, model building and simulations, exploration and analysis of multidimensional data. Students are introduced to concepts necessary for producing research proposals, executing the research, and reporting the results. Differential Tuition: $165.

CSM 7211. Doctoral Research. (0-0) 1 Credit Hour.
Prerequisite: Consent of advisor. Research work carried out by the student under the supervision of their Dissertation Committee. May be repeated as necessary, but no more than 15 hours may be applied to the Doctoral degree. Differential Tuition: $55.

CSM 7212. Doctoral Research. (0-0) 2 Credit Hours.
Prerequisite: Consent of advisor. Research work carried out by the student under the supervision of their Dissertation Committee. May be repeated as necessary, but no more than 15 hours may be applied to the Doctoral degree. Differential Tuition: $110.

CSM 7213. Doctoral Research. (0-0) 3 Credit Hours.
Prerequisite: Consent of advisor. Research work carried out by the student under the supervision of their Dissertation Committee. May be repeated as necessary, but no more than 15 hours may be applied to the Doctoral degree. Differential Tuition: $165.

CSM 7311. Doctoral Dissertation. (0-0) 1 Credit Hour.
Prerequisite: Successful defense of comprehensive exam. Dissertation work carried out by the student under the supervision of their Dissertation Committee. May be repeated as necessary, but not more than 15 hours may be applied to the Doctoral degree. Differential Tuition: $55.

CSM 7312. Doctoral Dissertation. (0-0) 2 Credit Hours.
Prerequisite: Successful defense of comprehensive exam. Dissertation work carried out by the student under the supervision of their Dissertation Committee. May be repeated as necessary, but not more than 15 hours may be applied to the Doctoral degree. Differential Tuition: $110.

CSM 7313. Doctoral Dissertation. (0-0) 3 Credit Hours.
Prerequisite: Successful defense of comprehensive exam. Dissertation work carried out by the student under the supervision of their Dissertation Committee. May be repeated as necessary, but not more than 15 hours may be applied to the Doctoral degree. Differential Tuition: $165.