

Certificate in Data Mining and Machine Learning

The Certificate in Data Mining and Machine Learning can be awarded in conjunction with any engineering master's degree. To qualify for this certificate, students enrolled in any master's in engineering program will need to meet the requirements listed below in addition to the standard requirements for their master's degree.

Required Courses

Code	Title	Units
CSE 417T	Introduction to Machine Learning	3
or ESE 417	Introduction to Machine Learning and Pattern Classification	
CSE 517A	Machine Learning	3
CSE 541T	Advanced Algorithms	3
Total Units		9

Foundations Courses

Choose two courses:

Code	Title	Units
CSE 412A	Introduction to Artificial Intelligence	3
CSE 513T	Theory of Artificial Intelligence and Machine Learning	3
CSE 514A	Data Mining	3
CSE 515T	Bayesian Methods in Machine Learning	3
CSE 519T	Advanced Machine Learning	3
CSE 543T	Algorithms for Nonlinear Optimization	3
ESE 415	Optimization	3
SDS 493	Probability	3
or ESE 520	Probability and Stochastic Processes	
SDS 494	Mathematical Statistics	3

Domain Courses

Choose one course:

Code	Title	Units
CSE 427S	Cloud Computing with Big Data Applications	3
CSE 518A	Human-in-the-Loop Computation	3
CSE 527A	Natural Language Processing	3
CSE 534A	Large-Scale Optimization for Data Science	3

CSE 557A	Advanced Visualization	3
CSE 559A	Computer Vision	3
CSE 584A	Algorithms for Biosequence Comparison	3
CSE 587A	Algorithms for Computational Biology	3

Additional Information

- All courses must be taken for a grade.
- Students with previous courses in machine learning may place out of CSE 417T. These students will be required to complete an additional foundations course for a total of three foundations courses.
- Students who began the certificate prior to FL16 who have successfully completed CSE 517A, independent of CSE 417T, will be required to complete an additional foundations course in place of CSE 417T for a total of three foundations courses. No student will be allowed to take CSE 417T after the successful completion of CSE 517A.
- Any student who began the certificate prior to FL16 may use CSE 441T in place of CSE 541T.