

Fundamental Courses

CSCI 455X Introduction to Programming Systems Design
4 units

EE 503 Probability for Electrical and Computer Engineers
4 units

EE 510 Linear Algebra for Engineering
4 units

Data Science Infrastructure

EE 542 Internet and Cloud Computing
3 units
EE 450 or EE 457

CSCI 551 Computer Networking
4 units
CSCI 402, EE 450

EE 553 Computational Solution of Optimization Problems
3 units
EE 510

EE 565 Information Theory and Its Application to (Big) Data Sciences
4 units
EE 503

CSCI 570 Analysis of Algorithms
4 units

CSCI 585 Database Systems
4 units

Machine Learning

EE 500 Neural Learning and Computational Intelligence
4 units
EE 483, EE 503, EE 510

EE 546 Mathematics of High-Dimensional Data
4 units
EE 503, EE 510

EE 559 Mathematical Pattern Recognition
3 units
EE 503, EE 510

EE 660 Machine Learning from Signals: Foundations and Methods
3 units
EE 503, EE 510, EE 559

Statistical Methods for Data Analytics

EE 517 Statistics and Data Analysis for Engineers
4 units
EE 503

EE 563 Estimation Theory
3 units
EE 503

MATH 541a Introduction to Mathematical Statistics
3 units

EE 583 Statistical Signal Processing
3 units
EE 503

Signal Data Analytics

EE 483 Introduction to Digital Signal Processing
4 units

EE 596 Wavelets and Graphs for Signal Processing and Machine Learning
4 units
EE 483, EE 510

EE 592 Computational Methods for Inverse Problems
3 units
EE 483, EE 510

Visual Data Analytics

EE 569 Introduction to Digital Image Processing
4 units
EE 503

CSCI 677 Advanced Computer Vision
4 units

EE 669 Multimedia Data Compression
3 units
EE 503

Speech and Language Data Analytics

EE 519 Speech Recognition and Processing for Multimedia
3 units
EE 483

EE 619 Advanced Topics in Automatic Speech Recognition
3 units
EE 503, EE 519, CSCI 544

CSCI 544 Applied Natural Language Processing
4 units

Legend

Grouping

EE 000 Course Title

Course Units

Recommended Prep.

Prerequisite Courses

Corequisite Courses

indicates a class with a significant computing/design component

This chart shows course relationships

Please check the University Catalogue for specific course details including any recommended preparatory courses and Degree Requirements