# Area Courses

## Data Science and Engineering

### Fundamental Courses
- **EE 441** Applied Linear Algebra for Engineering
- **CSCI 455x** Introduction to Programming Systems Design
- **EE 503** Probability for Electrical and Computer Engineers

### Data Science Infrastructure
- **EE 542** Internet and Cloud Computing (EE 450 or EE 457)
- **CSCI 551** Computer Communications
- **EE 553** Computational Solution of Optimization Problems (EE 441)
- **EE 565** Information Theory and Compression (EE 503)
- **CSCI 570** Analysis of Algorithms
- **CSCI 585** Database Systems

### Machine Learning
- **EE 500** Neural and Fuzzy Systems (EE 503)
- **EE 5XX** Mathematics of High-Dimensional Data (EE 441, EE 503)
- **EE 559** Mathematical Pattern Recognition (EE 441, EE 503)
- **EE 660** Machine Learning from Signals: Foundations and Methods (EE 441, EE 503)

### Statistical Methods for Data Analytics
- **EE 517** Statistics for Engineers (EE 503)
- **MATH 541a** Introduction to Mathematical Statistics
- **EE 563** Estimation Theory (EE 503)
- **EE 583** Statistical Signal Processing (EE 503)

### Signal Data Analytics
- **EE 483** Introduction to Digital Signal Processing (EE 450)
- **EE 596** Wavelets (EE 441, EE 483)
- **EE 5XX** Graph Signal Processing (EE 441, EE 483)

### Visual Data Analytics
- **EE 569** Introduction to Digital Image Processing (EE 401, EE 503)
- **EE 574** Computer Vision (CSCI 455x)
- **EE 669** Multimedia Data Compression (EE 503)

### Speech and Language Data Analytics
- **EE 519** Speech Recognition and Processing for Multimedia (EE 483)
- **EE 619** Advanced Topics in Automatic Speech Recognition (EE 503, EE 519, CSCI 544)
- **CSCI 544** Applied Natural Language Processing

### Legend
- **Course Title**
- **Corequisite Courses**
- **Recommended Prep.**
- Indicates a class with a significant computing/design component

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This chart shows course relationships. Please check the University Catalogue for specific course details including any recommended preparatory courses and Degree Requirements.