

List of Prerequisites in *Economics, Data Analytics & Corporate Finance* Graduate Degree Program

Analysis

- Multivariable calculus
- Integration

Linear algebra

- Eigenvalues and eigenvectors
- Matrix diagonalization

Differential calculus and optimization

- Differentiating a function of several variables, chain rule
- First order condition in optimization with several variables
- Envelope Theorem
- Lagrangian
- Kuhn and Tucker theorems

Sequences, series,

- Convergence
- Usual series (e.g. geometric)

Probability theory

- Expectation
- conditional expectation
- Usual laws: exponential, Poisson, and normal distributions
- Convergence
- Central limit Theorem

Statistics

- Statistical test
- Error types
- Ordinary least square regressions
- Monte Carlo simulations