

ML Courses

- Big Data Analytics ([CIS 545](#)) - 50/50 ML/databases
- Data Mining: Learning from Massive Datasets ([ESE 545](#)) - *more mathy than 520?*
- Computational Learning Theory ([CIS 625](#)) - *ML theory*
- Advanced Topics in ML ([CIS 620](#)) - *ML theory*
- Artificial Intelligence ([CIS 521](#)) - *not much ML*
- Deep Learning for Data Science ([CIS 522](#)) - *good*
- Principles of Deep Learning (ESE546)
- Computational Linguistics ([CIS 530](#))
- Machine Perception ([CIS 580](#))
- Computer Vision ([CIS 581](#))
- Advanced Topics in Computer Vision ([CIS 680](#))
- Learning in Robotics ([ESE 650](#))
- Explainable AI ([CIS700](#)) - *fun(?) special topic course*

Optimization Courses

- Linear Algebra/Optimization ([CIS 515](#))
- Introduction to Optimization Theory ([ESE 504](#))
- Convex Optimization ([ESE 605](#))

Statistics/Math Courses

- Mathematical Statistics ([STAT 512](#)) - *regression and hypothesis testing (good)*
- Bayesian Methods (STAT 542) - *EM and beyond (good)*
- Introduction to Spatial Analysis (ESE 502)
- Forecasting and Time-Series Analysis ([STAT 910](#))
- Sample Survey Methods ([STAT 920](#))
- Observational Studies ([STAT 921](#))
- Modern Regression for the Social, Behavioral and Biological Science ([STAT 974](#))
- Accelerated Regression Analysis ([STAT 621](#)) - *only MBAs??*
- Modern Data Mining ([STAT 571](#)) - *probably redundant with 520*
- Elements of Probability Theory and Random Processes (ESE 530) - *mathy*
- Information Theory ([ESE 674](#)) - *nice math*
- Stochastic Processes ([STAT 533](#)) - *more math*
- <https://statistics.wharton.upenn.edu/programs/phd/course-schedule/>

Penn's [data science masters](#)- lists more courses

