Tentative Syllabus:

Supervised learning (learn to predict):

- linear regression
- linear classifiers
- decision trees
- ensemble methods
- evaluation of supervised learning

Unsupervised learning (learn to understand):

- agglomerative clustering
- k-means clustering
- dimensionality reduction and visualization
- frequent pattern mining using the Apriori algorithm

Reinforcement learning (learn to act):

- Markov decision processes
- Q-learning

Course materials:

- No text book required, lecture notes and reading materials will be posted on the webpage, please check regularly.
- Here are some useful books for references.
  - *Machine learning*, Tom Mitchell, McGraw-Hill (Referred to as TM)
  - *Machine learning and pattern recognition*, Chris Bishop, Springer (referred to as Bishop)

Prerequisite: CS325