

## Syllabus: Mining Social Media

This course is designed for students who have taken Data Society's Introduction to Network Analysis course or who have some experience in network analysis. This 2 ½ hour course teaches students how to pull and clean social media data, identify the most important nodes in a network, and build a dispersion simulation within a network.

By the end of this course, students will be able to:

1. Identify key influencers and discovers important connectors
2. Create a message propagation strategy and simulate it in a model
3. Analyze networks and visualize them in dynamic graphs

Assessment:

1. **Concept reviews:** these are comprised of short five question quizzes that cover the most important concepts and ideas in each lesson. They encourage holistic understanding and are multi-faceted question types (i.e. drag and drop, fill-in-the-blanks, matching, etc).
2. **Exercises:** these are additional videos that cover the coding functions in the instructional video in more depth. They are project-based and include coding templates for students to strengthen their skills outside of the course.

Materials provided:

1. Accompanying PDFs to use as reference materials
2. R code templates from the instructional videos and exercises
3. Data sets used in the instructional videos and exercises

## Course Outline

1. **Gathering social media data:** 27 min
  - a) What is social media today?
  - b) Accessing the Twitter API
  - c) Formatting social media data
  - d) Cleaning social media data
  
2. **Building social media networks:** 36 min
  - a) Visualizing social media networks
  - b) Visualizing interactive networks
  - c) Visualizing hierarchical networks
  - d) Calculating network metrics
  
3. **Analyzing your network:** 35 min
  - a) Identifying key connectors
  - b) Measuring betweenness
  - c) Identifying most important nodes
  - d) Calculating importance
  
4. **Analyzing network effects:** 36 min
  - a) Calculating Twitter networks
  - b) Cascading network effects
  - c) Simulating network effects
  - d) Automating network effects
  
5. **Simulating network dispersion:** 31 min
  - a) Generating network effects data
  - b) Simulating network dispersion
  - c) Animating network dispersion
  - d) Additional tips and resources

*Total instructional time:*

*2 hrs, 35 min*