

Course Syllabus

Course Number: CAP 6xxx
Course Title: Social Media and Network Analysis
Semester: Summer 2016
Instructor: Dr. G. Sukthankar
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Course Objectives:

The course will cover techniques developed by the computer science research community for analyzing social networks and social media datasets.

After completing this course the students will have mastered:

- 1) Computational approaches for social network analysis;
- 2) Data processing and machine learning techniques for extracting information from social media datasets (e.g., Twitter).

They will be exposed to current research in the area and commercial applications for these technologies.

Prerequisites:

COT 5XXX Network Science

Required Text: Community Detection and Mining in Social Media (Tang and Liu); Twitter Data Analytics (Kumar, Morstatter, and Liu)

Supplemental Reading: An assortment of papers to be made available on the class website

Grading Scheme:

The grade in the course will be based on a final exam (30%) and two projects (midterm project: social network analysis 30%; final project: analyzing large datasets 40%).

Policy

- 1) Students are expected to adhere to UCF's standard of academic integrity. All references and code must be cited appropriately. Students must receive permission before including material developed for other courses.
- 2) Course material will be made available on webcourses (my.ucf.edu). Class attendance is highly encouraged, and students are responsible for all material which is discussed in class.
- 3) No grades of Incomplete will be given except for very extreme medical reasons. Please do not fall behind in your assignments.

- 4) Late assignments will be accepted at a 20% point reduction per day of lateness. However, no assignment will be accepted after the final due date of the final project.
- 5) The student is responsible for accessing his/her email on a regular basis. Anything announced through email is as if it was announced during class.

Topic Schedule

1. **Network Fundamentals: Nodes, Ties, and, Influence**
2. **Network Models and Synthetic Network Generation**
3. **Community Detection**
4. **Community Detection in Evolving Networks**
5. **Processing and Visualizing Twitter Data**
6. **Natural Language Processing Techniques for Microtext Analysis**
7. **Meme Tracking**
8. **Midterm Project Presentations**
9. **Influence Maximization**
10. **Link Prediction**
11. **Collective Classification**
12. **Applications: Advertising**
13. **Applications: Game Analytics**
14. **Final Project Presentations**