

## MMC6936 Computational Methods for Media Research

Spring 2022

**Professor:** Jieun Shin

Department of Media Production, Management, Technology

**Email:** jieun.shin@ufl.edu

**Office:** Weimer 1098

**Office Hours:** Fridays 09:35 am-12:20 pm and by appointment.

### Course Description

Computational social science is an exciting, emerging field which also offers a wide range of research tools. This course is an introductory and project-oriented course with an emphasis on data collection and computational methods. In this course, students will learn how to conduct social research using digital trace data (broadly defined as data collected through digital means) and computational methods (including but not limited to text analysis and social network analysis). Throughout the semester, students will practice translating their ideas into empirical research. Each week, students will have the opportunity to try their hands at analyzing data from a wide range of data sources. The goal is to help students identify datasets and apply proper methods to analyze their own data. We will be mainly using the R software environment for collecting, cleaning, and analyzing data. Previous experience with R is not assumed.

### Course Goals

Upon successful completion of this course, students will be able to

1. Collect digital trace data from the webs
2. Become familiar with computational methods and tools to analyze the data
3. Construct and execute basic programs in R
4. Use techniques to effectively visualize information
5. Understand the advantages and limitations of digital data

### Course Schedule

Schedule	Module	Assignment
Week 1 (Jan 7)	Module 0. Introduction	✓ Download R ✓ Download R studio
Week 2 (Jan 14)	Module 1. R programming	✓ Lab1 : Vector, List, and Data frame
Week 3 (Jan 21)	Module 2. Volume data	✓ Lab 2 : Counting values, Data manipulation
Week 4 (Jan 28)	Module 3. Text data (part 1)	✓ Lab 3 : Pattern matching and String replacement
Week 5 (Feb 4)	Module 4. Text data (part 2)	✓ Lab4 : Sentiment analysis

Week 6 (Feb 11)	Module 5. Network analysis (part 1)	✓ Lab5 : Network size, centrality measures
Week 7 (Feb 18)	Module 6. Network analysis (part 2)	✓ Lab 6 : Reciprocity, transitivity
Week 8 (Feb 25)	Module 7. Network Analysis (part3)	✓ Lab7 : Community detection
Week 9 (March 4)	Module 8. Application programming interface	✓ Lab 8 : Data collection through API
Week 10 (March 18)	Module 9. Survey	✓ Lab 9 : Merge of survey + digital trace data
Week 11 (March 25)	Module 10. Machine learning (part1)	✓ Lab 10 : Topic modeling
Week 12 (Apr 1)	Module 11. Machine learning (part2)	No Lab
Week 13 (April 8)	Final presentation	✓ Presentation : 30-minute talk
Week 14 (April 15)	Final presentation	✓ Presentation : 30-minute talk
Week 15 (April 22)	Final project	Submit the paper

### Required Text

All required readings are in the Course Shell. There are no required textbooks.

### Note.

1. Please ask class-related questions in the question forum, not in the “comments” section of an assignment. This way, you can share the answers with other fellow students.
2. For technical issues with Canvas, please contact E-learning technical support, 352-392-4357 (select option 2) or e-mail to [Learningsupport@ufl.edu](mailto:Learningsupport@ufl.edu). <http://helpdesk.ufl.edu/>

### GRADING

Grades are *earned* via 5 modes: Assignments, Discussions, Exam, Certificate, and Final analytics report.

Area	Percent of Grade
<b>10 Labs (5 % each)</b>	<b>50%</b>
<b>Final presentation</b>	<b>10%</b>
<b>Final paper</b>	<b>40%</b>
<b>Total</b>	<b>100%</b>

### Grading scale

100-93 A; 92-90 A-; 89-87 B+; 86-84 B; 83-80 B-; 79-77 C+; 76-74 C; 73-70 C-; 69-67 D+; 66-64 D; 63-60 D-; 59 and below E

### Labs (assignments)

All labs are due at the specified dates – usually due on Sunday by midnight. Any assignments turned in after the designated due date will receive penalty (50 % of the available points within 24 hours after the due date). Assignments will not be accepted after 24 hours. Additionally, with respect to assignments and discussions, it is assumed that students will present them professionally. This means students will use proper grammar, word usage, spelling, and content organization. Academic honesty is expected on all assignments and discussions.

### **Final Presentation**

Each student will present their project (in-progress) for my feedback. Aim for a 30-minute PowerPoint presentation followed by a 10-minute Q&A session. The presentation should include the main research question and/or hypotheses, detailed methods, and major findings.

### **Final Project**

As a part of the assigned work for this course, you are required to complete a research project of your own choosing one or two methods covered in this course. The premise of the project must be closely related to some aspect of the course material but may explore an avenue that was left un-addressed in class. The final project report should be around 20 pages. Please submit your report by April 20.

The final report should include the following elements. Prepare your manuscript in APA style.

1. Literature review: This section should include motivation and background of your project. Explain the context and why the problem matters. Why are they worth studying? What difference would knowing the answers make?
2. Methods: (A) Dataset- Describe the real, existing dataset that you used. (B) Data Analysis- Describe how you analyzed the data.
3. Results: Present and discuss your research results. Focus in particular on the results that are most interesting, surprising, or important. Discuss the consequences or implications. Make sure to include tables, graphs, or figures.
4. Discussion: Interpret and describe the significance of your findings in light of what was already known about the research problem. Also include the limitations of your approach.

### **OTHER CLASS POLICIES**

- **Students with Special Needs:** Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.
- **Course Evaluations:** Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

- **Academic Honesty:** The University of Florida Honor Code applies to all activities associated with this class.
- ✓ UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.
- ✓ On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions.
- ✓ You can review UF’s academic honesty guidelines in detail at:  
<https://www.dso.ufl.edu/sccr/seminars-modules/academic-integrity-module>
- **Religious Observance:** Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence.
- Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>