

2228-LAPS-5394-001/-002/-900  
Social Network Analysis  
Fall 2022

## Instructor Information

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### Instructor(s)

Dr. Oleksandra Poquet

### Email Address

Coming soon!

### Faculty Profile

You are able to find information about any course instructors at

<https://mentis.uta.edu/explore/browse>

### Office Hours

Given the global nature of our master's program, instructors will meet with students as needed via Microsoft Teams or Zoom. Students can schedule a time with me via email.

## Course Information

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### Section Information

2228-LAPS-5394-001/-002/-900

### Time and Place of Class Meetings

This course will take place online only. While the majority of the course will be completed asynchronously, there will be opportunities for synchronous sessions to address specific questions that will arise during the course. You are encouraged to attend, but I fully understand that it might not be possible. Any live sessions will be recorded, and I will be available to answer any questions that you might have.

### Description of Course Content

In this course, students will learn fundamental elements of using network analysis in educational research, focusing on data collected in educational contexts and digital traces. The course includes review of evidence around specific educational problems informed by social network analysis and network science.

### Student Learning Outcomes

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

- Apply descriptive measures of social network analysis to educational data using R.
- Transfer theoretical constructs from social network analysis to research problems in educational sciences and learning analytics.
- Understand the fundamentals of designing a research study that analyses relational data.
- Understand and critique evidence derived using social network analysis.
- Apply social network analysis theories and analytical techniques for addressing a research problem in an educational setting.

## Required Textbooks and Other Course Materials

There are no required texts to purchase for this course. Any course materials are either publicly available or can be accessed through the UTA Library.

This is an interdisciplinary course where we combine graph theory, network science, social science research, social network analysis, and learning analytics. No textbook exists to address how these come together. That said, a number of textbooks and handbooks on the topic of social network analysis exist. A selection of possibilities is provided below and the students may check if any of these are available via library for OPTIONAL insights that are complementary to the main course materials provided by the instructor.

- **[OPEN ACCESS]** Hanneman, R.A., & Riddle, M. (2005). *Introduction to social network methods*. Riverside, CA: University of California, Riverside (published in digital form at <http://faculty.ucr.edu/~hanneman/> )
- **[OPEN ACCESS]** Chen, B. (2021). *Applied social network analysis in education* (published in digital form at <https://bookdown.org/chen/snaEd/>)
- Carolan, B. V. (2013). *Social network analysis and education: Theory, methods & applications*. Sage Publications.
- Kadushin, C. (2012). *Understanding social networks: Theories, concepts, and findings*. Oxford University Press.
- Robins, G. (2015). *Doing social network research: Network-based research design for social scientists*. Sage.
- Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2018). *Analyzing social networks*. Sage.
- Scott, J., Carrington, P.J. (2011). *The SAGE Handbook of Social Network Analysis*. SAGE Publications, Los Angeles, London.
- Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications*.
- Zweig, K. A. (2016). *Network analysis literacy*. Springer-Verlag GmbH Austria.

## Descriptions of major assignments and examinations

### **Weekly participation - 25%**

Since the course is interdisciplinary, you will need to connect information from the readings. To facilitate this process, I will ask you to engage in reflections around the readings. You are required to post 1-2 questions that you had when doing the readings and/or thinking about the reflection questions. You are encouraged but not required to share your insights and engage with other students questions and comments. After the weekly deadline for question submission, you must vote for the 2 questions you want to receive an answer to. I will address two top question selected by the class on a weekly basis.

### **Labs and case studies - 50%**

The course will have five practical labs and five case studies that you are required to submit during the course. These are made to help you make sense of the concepts and help to apply them. Correctness of your work in the labs and cases will not be assessed. You can submit these weekly but no later than December 6th. Correct answers for the labs and cases will be made available in the shared discussion spaces in the corresponding weeks of the course. Mastery of these will prepare you for the review discussion.

### **Review Discussion - 25%**

By the end of the course, you will prepare a presentation of a critical review of literature around a significant problem in educational research that has been addressed using network analysis. The presentation will need to include review of up to five existing findings, description of how the data used in the studies have been collected and analysed, and what limitations exist within the current work. You will be asked questions around your presentation and your response will be assessed, alongside your presentation. I will be evaluating your understanding of the main challenges for

applying network data to educational problems and the main concepts studying throughout the course.

**Good questions – bonus 5%**

Every week you are required to submit 1-2 questions to the instructor and vote on the best question. A student whose questions would be picked by the entire group in at least 2 weeks will receive a bonus 5% that will be added to their performance. The instructor reserves the right to also award the bonus points to the student who had posed outstanding questions that may not have received the group vote.

**Technology Requirements**

Most work will take place on Canvas. Students will also need R and R-Studio installed. Students may choose to use other software on their own, but they are required to submit labs using R programming language. The instructor will offer no support for the installation process.

**Grading Information**

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**Grading**

90-100 points	A
80-89 points	B
70-79 points	C
60-69 points	D
< 60	F

Weekly participation: 25% (2.5% each week - 12 required)  
Labs and case studies: 50% (5% each – 10 in total)  
Review Discussion: 25%  
Good questions: Bonus 5%

Extra credit will be awarded to all students whose questions were selected at least for 2 weeks as most popular. It may be offered to other students who asked exceptional questions, upon the instructor’s decision.

**Expectations for Out-of-Class Study**

Students in this course should expect to spend at least 6-9 hours per week in course-related activities, including reading and viewing required materials, preparing and completing assignments, or attending live sessions.

**Grade Grievances**

Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.

**Course Schedule**

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. This may include the addition of a guest speaker or changes to the course material covered during the weeks detailed below.

A week opens on Monday and ends on a Sunday evening.

Weekly questions are due by each Thursday at 11:59pm US CT to be considered on time, for the weeks when that is required. Voting on weekly questions is due by Monday at 11:59pm US CT. Late work is only accepted at the discretion of the instructor and every effort should be made to submit by the deadline.

<b>Week</b>	<b>Dates</b>	<b>Topic</b>	<b>Assessment</b>	<b>Comments</b>
<b>Module 1: Introduction</b>				
W1	Aug 22 - Aug 28	Introduction I	Qs	
W2	Aug 29 - Sep 4	Introduction II	Lab 1, Qs	
<b>Module 2: Node-level analysis</b>				
W3	Sep 5 - Sep 11	Analysing graphs I	Qs	September 5 – Labor Day
W4	Sep 12 – Sep 18	Big ideas in networks I	Lab 2, Qs	
W5	Sep 19 - Sep 25	Applications in learning analytics I	Case 1, Qs	
<b>Module 3: Sub-graph level analysis</b>				
W6	Sep 26 - Oct 2	Analysing graphs II	Qs	
W7	Oct 3 - Oct 9	Big ideas in networks II	Lab 3, Qs	
W8	Oct 10- Oct 16	Applications in learning analytics II	Case 2, Qs	
<b>Module 4: Network formation</b>				
W9	Oct 17- Oct 23	Analysing graphs III	Lab 4, Qs	
W10	Oct 24 - Oct 30	Applications in learning analytics III	Case 3,Qs	October 28 – <b>last day to drop courses</b>
W11	Oct 31 - Nov 6	Review of foundational themes in SNA	Lab 5, Qs	
<b>Module 5: Networks in Learning Analytics</b>				
W12	Nov 7 - Nov 13	Designing network research	Case 4, Qs	
W13	Nov 14 - Nov 20	Network science in learning analytics	Case 5, Qs	
W14	Nov 21 - Nov 27	Mixing methods in network studies	Last day to submit cases and labs	Thanksgiving Schedule Personal consultations
W15	Nov 28 - Dec 4	Trends in network science of educational data		Personal consultations for your review discussion

## **Institutional Information**

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UTA students are encouraged to review the below institutional policies and informational sections and reach out to the specific office with any questions. To view this institutional information, please visit the [Institutional Information](https://resources.uta.edu/provost/course-related-info/institutional-policies.php) page (<https://resources.uta.edu/provost/course-related-info/institutional-policies.php>) which includes the following policies among others:

- Drop Policy
- Disability Accommodations
- Title IX Policy
- Academic Integrity
- Student Feedback Survey
- Final Exam Schedule

## **Additional Information**

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### **Master of Science in Learning Analytics Orientation and Resource Hub**

This [Orientation and Resource Hub](#) is a central resource for students in the master's program. It has all critical information related to the program, any events, UTA resources, and training for new students. The hub is not available for students who are not enrolled in the MSLA program, but many resources will be shared through course announcements.

### **Departmental and Program Assistance**

If you have any questions about the MSLA program, please contact Dr. George Siemens ([gsiemens@uta.edu](mailto:gsiemens@uta.edu)).

### **Attendance**

At the University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator of student success. Each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. No attendance will be formally taken in this course; however, students are expected to participate weekly in order to complete all required activities.

While UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report must the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Canvas. This date is reported to the Department of Education for federal financial aid recipients.

### **Academic Success Center**

The Academic Success Center (ASC) includes a variety of resources and services to help you maximize your learning and succeed as a student at the University of Texas at Arlington. ASC services include supplemental instruction, peer-led team learning, tutoring, mentoring and TRIO SSS. Academic Success Center services are provided at no additional cost to UTA students. For additional information visit: [Academic Success Center](#). To request disability accommodations for tutoring, please complete this [form](#).

### **The English Writing Center**

The Writing Center offers FREE tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at the Writing Center (<https://uta.mywconline.com>). Classroom visits,

workshops, and specialized services for graduate students and faculty are also available. Please see Writing Center: OWL for detailed information on all our programs and services.

## **Library Information**

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Each academic unit has access to [Librarians by Academic Subject](#) that can assist students with research projects, tutorials on plagiarism and citation references as well as support with databases and course reserves.

### **Research or General Library Help**

Ask for Help

- [Academic Plaza Consultation Services](http://library.uta.edu/academic-plaza) (library.uta.edu/academic-plaza)
- [Ask Us](http://ask.uta.edu/) (ask.uta.edu/)
- [Research Coaches](http://libguides.uta.edu/researchcoach) (http://libguides.uta.edu/researchcoach)

Resources

- [Library Tutorials](http://library.uta.edu/how-to) (library.uta.edu/how-to)
- [Subject and Course Research Guides](http://libguides.uta.edu) (libguides.uta.edu)
- [Librarians by Subject](http://library.uta.edu/subject-librarians) (library.uta.edu/subject-librarians)
- [A to Z List of Library Databases](http://libguides.uta.edu/az.php) (libguides.uta.edu/az.php)
- [Course Reserves](https://uta.summon.serialssolutions.com/#!/course_reserves) (https://uta.summon.serialssolutions.com/#!/course\_reserves)
- [Study Room Reservations](http://openroom.uta.edu/) (openroom.uta.edu/)