TPTE 595 and 695: Studying Digital Learning Environments and Networks

University of Tennessee, Knoxville

Meeting Time and Place: Tuesdays and Thursdays, 2:50 – 4:05 pm (online, synchronous)
Course Credit Hours: 3

Faculty Contact Information:

Dr. Joshua Rosenberg
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420 Claxton
865-236-1445
Zoom: https://tennessee.zoom.us/my/jmrosenberg (password: rosenroom)
Website: https://joshuamrosenberg.com
Slack: <link to be added>

Please don't hesitate to email us or contact me on Slack with updates, questions or concerns. I will try to respond within 24 hours during the week and 48 hours on the weekend. I will notify you if our response may be delayed. In short, please stay in touch!

Major Topics:

- Posing questions that can be answered using digital data sources, including data from formal (e.g., online courses) and informal (e.g., teachers' social media-based networks) contexts
- Accessing and working with structured (from databases/Application Programming Interfaces (APIs)) and unstructured (e.g., text) data
- Introduction to functional programming for preparing complex datasets

Student Learning Objectives:

- Understanding the core principles of learning analytics and how these methods can be used to study formal and informal digital learning environments
- Develop the ability to access and and work with well-"structured" datasets from databases and Application Programming Interfaces (APIs)
- Develop the ability to access and work well-structured datasets, including text-as-data and social media data
- Understand the range of publicly data available to researchers to carry out secondary analyses or their own analysis
- Develop the ability to use the R functional programming package purrr and the tidyr package to prepare complex datasets for later investigation
- Access or use data from a digital learning environment for a data science-related investigation that involves preparing, summarizing, modeling, or visualizing data, and presenting conclusions to the class community
- Know about the range of the learning analytics community and how one can begin to become involved in this and related communities

Learning Environment:

This class will be taught in a fully-online format. I will use Zoom for synchronous (or at-the-same-time) a) introductions to new content, b) "try-it-out" laboratories, and c) discussions. I will also use a number of tools for asynchronous communication, including a) Slack, b) GitHub, and c) features of the Canvas course learning management system.

Course Communications:

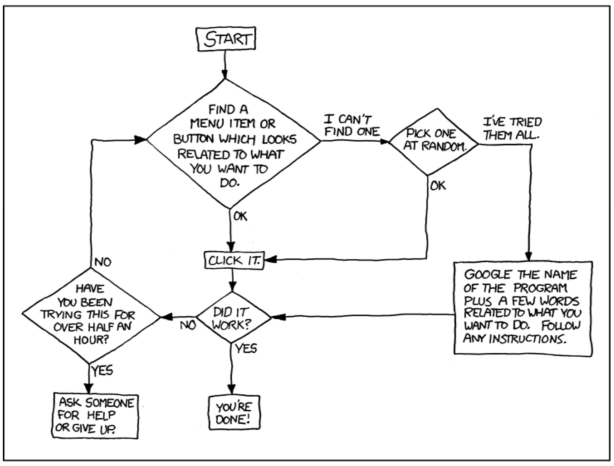
Slack

Slack is a communication platform designed for teams (e.g., in a company), that has begun to be used in education. I will use Slack to share resources and for asking and questions of one another. You are encouraged but not required to check Slack daily, and to use the app on your mobile device or phone.

Email

If you email us, you will generally receive a response within 24 hours. I ask for you to please try to respond within 24 hours, too. You can contact me via email (above) or Slack (preferred).

How to Be Successful in This Course:



- Don't hesitate to ask questions! Learning to do data science is challenging for everyone, and reaching out for support and assistance is *imperative*.
- My late assignment policy is that *as long as you submit the assignment before I grade it, you will receive full credit*. However, I may grade assignments very soon after they are due. For assignments received after the due date, 5% from the grade you otherwise would earn will be subtracted from your final grade for each day late.

Texts/Resources/Materials:

Estrellado, R. A., Freer, E. A., Mostipak, J., Rosenberg, J. M., & Velásquez, I. C. (2020). *Data science in education using R*. London, England: Routledge. Freely-available from: http://www.datascienceineducation.com/

Lang, C., Siemens, G., Wise, A., & Gasevic, D. (Eds.). (2017). *Handbook of learning analytics*. Society for Learning Analytics and Research. https://www.solaresearch.org/publications/hla-17/

Learning Analytics Research Network. *Learning Analytics 101*. https://steinhardt.nyu.edu/learning-analytics-101

Required Equipment:

You will need *a computer* (Mac, Windows, or Linux are fine!) on which you can install applications, but you do not need a computer with any particular specifications (speed, storage, etc.) beyond what you use for other courses: whatever you have will work for this course.

Learning Activities and Evaluation:

- Complete exercises on visualizing data each week using R Markdown

- Four interactive examinations on learning analytics and studying digital learning environments: key principles and workflows, analyzing well-“structured” data, analyzing less well-”structured” data, and functional programming.
- Discuss learning analytics papers and publications, including key chapters from the *Handbook of Learning Analytics*
- Create one R Markdown document to access and prepare well-”structured” digital data (due approximately one-half of the way through the semester)
- Create one R Markdown document to access and prepare less well-”structured” digital data (due approximately three-quarters of the way through the semester)
- Conduct a start-to-finish learning analytics analysis and share the results with the class community to elicit feedback and ideas for next steps

University Policies:

Academic Integrity:

“An essential feature of the University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.”

University Civility Statement:

Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability and courteousness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other’s well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus: http://civility.utk.edu/.

Disability Services:

“Any student who feels s/he may need an accommodation based on the impact of a disability should contact Student Disability Services in Dunford Hall, at 865-974-6087, or by video relay at, 865-622-6566, to coordinate reasonable academic accommodations.

Your Role in Improving Teaching and Learning Through Course Assessment:

At UT, it is our collective responsibility to improve the state of teaching and learning.

During the semester, you may be requested to assess aspects of this course either during class or at the completion of the class. You are encouraged to respond to these various forms of assessment as a means of continuing to improve the quality of the UT learning experience.

Basic Needs:

Any student who faces challenges securing their food or housing and believes they may affect their performance in the course is urged to contact the Dean of Students (974-HELP or via https://dos.utk.edu/) for support. Furthermore, please contact the instructor if you are comfortable doing so.

Key Campus Resources for Students:

- Center for Career Development (Career counseling and resources; HIRE-A-VOL job search system)
- Course Catalogs (Listing of academic programs, courses, and policies)
- Hilltopics (Campus and academic policies, procedures and standards of conduct)
- OIT HelpDesk (865) 974-9900
- Schedule of Classes/Timetable
- Student Health Center (visit the site for a list of services)
- Student Success Center (Academic support resources)
- Undergraduate Academic Advising (Advising resources, course requirements, and major guides)
- University Libraries (Access to library resources, databases, course reserves, and services)

The instructor reserves the right to revise, alter or amend this syllabus as necessary. Students will be notified in writing / email of any such changes.