# LAPS-5330-001Psychology of Learning and the Learning Sciences

Spring 2023

## Instructor Information

### Instructor(s)

George Siemens, PhD

### Email Address

gsiemens@uta.edu

### Faculty Profile

Information about me can be found here: <https://mentis.uta.edu/explore/profile/george-siemens>

### Office Hours

Given the global nature of the MS LA program, I haven’t set office hours. I am willing to meet with you at flexible times. Please email me and I’ll confirm within 24 hours.

## Course Information

### Time and Place of Class Meetings

This course, and the entire MS LA, is exclusively online. All lectures will be recorded and learning materials for the coming week will be released Sunday evening. The course relies on extensive academic literature. Live sessions are planned throughout the course for primarily discussions and general course topic review. We will set the weekly dates during the first week (to accommodate the largest number of attendees) and record the session.

Learning online is a unique experience and requires different forms of engagement, in comparison with in-class sessions. A primary habit to develop is regular (daily) engagement with course materials. Suggestions on “how to succeed” online and related program and support resources are accessible through the MSLA Learning Hub.

### Description of Course Content

The MSLA focuses on using data science techniques to understand learning. With the rich history of research in domains of psychology and learning sciences, it’s important for researchers and practitioners in learning analytics to explore existing understanding of human learning processes and current evidence. Learning is a complex and integrated activity that involves an interplay of culture, context, and cognition. To understand learning, and related knowledge processes such as sensemaking, familiarity with a significant range of interacting variables is required. Within the field of learning analytics, researchers have access to holistic *in situ* data that provides insight into learning as it unfolds as well as mechanisms to intervene, support, and optimize processes. Data science in general, and learning analytics specifically, offer novel methodological approaches to assess and understand learning, advancing and accelerating research and insights to support teaching and learning.

This course provides learners with an overview of the history of research into human learning including cognitive, metacognitive, affective, and emotive attributes. The course will identify consequential theorists and researchers, the impact of teaching, learning states and processes, as well as anticipated opportunities and challenges of artificial cognition/intelligence.

### Student Learning Outcomes

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

* Describe the prominent stages and evolution of learning theory over the past 150 years.
* Explain how culture, cognitive processes, “artifact architecture”, distributed cognition, and embodied cognition interact in digital learning environments.
* Evaluate and articulate the attributes of, and relationship between, learning and sensemaking and the contexts in which both are required.
* Detail personal learning practices and processes that have the greatest impact on learning outcomes and performance.
* Evaluate how learning analytics relates to, and interacts with, existing research in psychology of learning and learning sciences.
* Describe the process of using data to create constructs of learner performance, including cognitive states such as mind wandering, attention management, and self-regulation.
* Detail learning ecologies and how they support learning
* Evaluate the impact of information abundance, ease of information access, and information error and manipulation on the processes of learning and sensemaking in forming coherent and integrated knowledge about specific topics.

*Required Textbooks and Other Course Materials*

This course uses the Cambridge Handbook of Learning Sciences, 2nd edition as a primary text. The paperback version of this text is available on various sites ranging in total from $45-70 USD. Some are available for less if you’re exploring used options. Kindle, pdf, and ebook versions are often priced less.

Additional readings, accessible through University of Texas Arlington Library, will also be used.

During the course, articles will be provided in the weekly modules. Lectures and online resources will also be freely accessible.

### Descriptions of major assignments and examinations

Assignments

This course has three primary assignments and one participation grade. Additional details during a live session (recorded for later viewing) will be provided within the first few weeks of the course starting.

*Ongoing Learning Activity 15%*

A critical aspect of learning is creating an infrastructure for ongoing and continuous learning. For this assignment, you will use the social bookmarking site, Diigo, to capture and share articles, videos, and other resources addressing learning processes and learning activities. Your grade will be based on frequency of sharing and quality of summary notes. You should post an article or resource on at least 12 weeks.

*Group Project 40%*

This assignment involves two small group activities. You will begin in groups of 2 or 3. You will select and review a foundational topic in learning sciences. You will create a presentation of ~10 minutes detailing what is currently known about this topic. You will then be re-assigned into a second group where you will be tasked with evaluating which learning analytics approaches could be used to address the opportunities of the topic created by one other group (this will also be assigned).

*Concept map 30%*

Throughout the course, we’ll be discussing critical readings and resources related to learning sciences and psychology of learning texts, ideas, and resources. For your concept map, using free/open software such as CMAP and VUE (Visual Understanding Environment), or PowerPoint or similar software, detail key learning concepts and their relatedness. Create a presentation, max 15 minutes, that details how the various learning science concepts are integrated and connected.

*Discussion forum participation 15%*

Discussions with peers are critical to learning and shaping your thinking and comfort with a diverse range of learning science topics, methodologies, and theories. Throughout the course, you will be asked to engage in discussions with peers about key topics relating to learning. Your grade will be determined by three components: 1. Original contribution, 2. Engagement with peers, 3. Consistency of posting.

### Technology Requirements

This course will primarily take place in Canvas, with some office hours in Zoom or MS Teams.

### Other Requirements

Given the distributed and global nature of the course, interaction with course instructors will occur online in Canvas.

You will also be invited to attend online webinars and conference during the duration of the course, and the MS LA program in general. These events may require additional technologies not detailed above.

You will explore additional technologies as you do your group work and methodologies. These tools will be decided by your group members, but none will be required or mandated.

For your concept map, you will have the choice to use open source software or tools like PowerPoint to create your map.

You will also use social bookmarking software (Diigo recommended) to share readings, videos, and related resources.

## Grading Information

### Grading

Grades will be posted on Canvas following three days after each assignment has been submitted. The grade scale is as follows:

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

**There is no extra credit.** The best predictor of a good grade is regular engagement with the course and reading of the assigned material within the assigned week.

### Expectations for Out-of-Class Study

Beyond the time required to view each online lecture, students should expect to spend at least an additional 5-7 hours per week in course-related activities, including reading required materials, engaging with peers, and completing assignments.

### 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.

**Regarding AI and cognitive tools (such as ChatGPT)**

I fully expect students to use all available tools and technologies to produce their best work. When you use automated writing tools (Moonbeam, ChatGPT), please include in the appendix the process of use. For example, include the prompt for producing text and the first generation version and subsequent adjustments that you make or that you re-process with AI tools. The intent is for you to intentionally detail how you produce writing and the ways that AI shapes your output.

## 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.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week** | **Dates** | **Topic** | **Assessment Details** | **Comment** |
| W1 | Jan 17 – Jan 22 | Orientation | Discussion Forum: Introduction | Course overview, assignments, expectations.  |
| W1 | Jan 23 – Jan 29 | Overview: Learning sciences and psychology of learning | Discussion Forum |  |
| W2 | Jan 30 – Feb 5 | The neuroscience of learning |  |  |
| W3 | Feb 6 – Feb 12 | Cultural dimensions of learning | Discussion Forum |  |
| W4 | Feb 13 – Feb 19 | Learning contexts |  |  |
| W5 | Feb 20 – Feb 26 | Cognition and learning | Discussion Forum |  |
| W6 | Feb 27 – Mar 5 | Metacognition and self-regulation |  |  |
| W7 | Mar 6 – Mar 12 | Distributed cognition | Group presentation #1 due: Mar 12 |  |
| W8 | Mar 13 – Mar 19 | Spring Break Week |  | Group reassignment posted |
| W9 | Mar 20 – Mar 26 | Embodied cognition |  |  |
| W10 | Mar 27 – April 2 | Conceptual change |  |  |
| W11 | April 3 – April 9 | Scaffolding and learner support | Draft concept map for peer review | Peers will have two weeks to review |
| W12 | April 10 – April 16 | Social and peer learning | Group Presentation #2 due: April 16 |  |
| W13 | April 17 – April 23 | Motivation, engagement, mind wandering | Discussion forum |  |
| W14 | April 24 – April 30 | Feedback | Concept map due (April 30) |  |
| W15 | May 1 – May 7 | Exam Week |  |  |

## Please see the Spring 2023 academic calendar for important dates: <https://www.uta.edu/academics/academic-calendar/spring-2023>

## Institutional Information

UTA students are encouraged to review the following 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

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

This [Orientation and Resource Hub](https://uta.instructure.com/courses/98914) 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.

**Departmental and Program Assistance**

If you have any questions about the MSLA program, please contact Justin T. Dellinger, Ph.D. at jdelling@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. Since the MS LA is fully online, attendance is less consequential than engagement. As the instructor of this course, I will encourage you to log on daily and be active in readings and discussions.

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](https://www.uta.edu/student-success/course-assistance). To request disability accommodations for tutoring, please complete this [form](https://forms.office.com/Pages/ResponsePage.aspx?id=Q1vcXL7XqkyBc3KeOwpi2ccSjcIXpSJAqJFuDEhczLlUMVVHRVRIVlJJWDZJWlVYOUgxNjRPODdLVS4u).

**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/) (https://uta.mywconline.com). Classroom visits, workshops, and specialized services for graduate students and faculty are also available. Please see [Writing Center: OWL](http://www.uta.edu/owl) for detailed information on all our programs and services.

**Library Information**
Each academic unit has access to [Librarians by Academic Subject](https://libraries.uta.edu/research/librarians) that can assist students with research projects, tutorials on plagiarism and citation references as well as support with databases and course reserves.

**University Exit and Emergency Procedures**

UTA requires information regarding campus security. This is a fully online course and on-campus emergency procedures do not apply. However, if you physically visit the campus, information is available here: [*UT Arlington Procedure 7-6: Emergency/Fire Evacuation Procedures*](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Ft.e2ma.net%2Fclick%2Fwgxbwg%2Fwgxzqr%2Fggadgo&data=05%7C01%7Cgsiemens%40uta.edu%7Ccc839aa0300b4a7e0f2808daf285880b%7C5cdc5b43d7be4caa8173729e3b0a62d9%7C0%7C0%7C638088952577301409%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=jxL%2B4ASGRm1l%2FaM1gzQ17DuUXRQ4Ua4DQvKUXThJLRA%3D&reserved=0)*. Here is the map of exits for the campus:*[*https://www.uta.edu/campus-ops/ehs/fire/Evac\_Maps\_Buildings.php*](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Ft.e2ma.net%2Fclick%2Fwgxbwg%2Fwgxzqr%2Fw8adgo&data=05%7C01%7Cgsiemens%40uta.edu%7Ccc839aa0300b4a7e0f2808daf285880b%7C5cdc5b43d7be4caa8173729e3b0a62d9%7C0%7C0%7C638088952577301409%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=JrrltjQ%2BcSM0f17QZVVLUUZNYM3qpeg3qPQFyrcPESI%3D&reserved=0)

### Research or General Library Help

Ask for Help

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

Resources

* [Library Tutorials](https://library.uta.edu/how-to) ([library.uta.edu/how-to](http://library.uta.edu/how-to))
* [Subject and Course Research Guides](https://libguides.uta.edu/) ([libguides.uta.edu](http://libguides.uta.edu/))
* [Librarians by Subject](https://library.uta.edu/subject-librarians) (library.uta.edu/subject-librarians)
* [A to Z List of Library Databases](https://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](https://openroom.uta.edu/)(openroom.uta.edu/)