Online learning

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**Educational Technology 0858-610, Spring 2022**

**Description:** Students study online learning in distance and blended classes, virtual schools in both higher education and K-12 settings. Looking at pedagogy, best practices, interactivity and student-centered design, this class considers the positive and negative potential of online learning in terms of universal accessibility, teacher development, and economic sustainability.

**Keywords:** online learning, hybrid learning, blended learning, virtual schools, distance learning, remote learning, flipped classroom

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**Office hours:**

* *office hours by appointment*

## Goals & objectives

Online, blended and web-enhanced learning is a major part of both higher education and K-12 teaching, learning. Students need to become aware of this new method of teaching, learning and instructional delivery. Students who wish to become educational professionals need to understand the pedagogy, best practices, interactivity and student-centered instructional design principles required for quality online, blended and web-enhanced learning. Students should also have an understanding of the political issues surrounding online, blended and web-enhanced learning such as cost, technical infrastructure, teacher development, student and teacher support and profit.

## Learning Outcomes

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

* understand the basic tenets, movement and use of online, blended and web-enhanced learning in K-12 and higher education;
* understand various technologies used for teaching and learning and course delivery in online, blended and web-enhanced environments;
* apply principles for the development of engaging and interactive online, blended and web-enhanced curriculum;
* design learning environments that address the challenges of creating interaction and community in online and virtual environments;
* apply best practices for teaching in online, blended and web-enhanced environments.

## Course Topics

### Schedule

| Week | Dates | Topic |
| --- | --- | --- |
| 1 | Jan 25 - Jan 31 | Introduction |
| 2 | Feb 01 - Feb 07 | Instructional design |
| 3 | Feb 08 - Feb 14 | Multimedia Theory |
| 4 | Feb 15 - Feb 21 | Universal Design |
| 5 | Feb 22 - Feb 28 | Platforms |
| 6 | Mar 01 - Mar 07 | Assessment |
| 7 | Mar 08 - Mar 14 | Presence |
| - | *Mar 15 - Mar 21* | *spring break* |
| 8 | Mar 22 - Mar 28 | Adaptive Learning |
| 9 | Mar 29 - Apr 04 | Remote Learning 1 |
| 10 | Apr 05 - Apr 11 | Remote Learning 2 |
| 11 | Apr 12 - Apr 18 | Prototpye 1 |
| 12 | Apr 19 - Apr 25 | Prototpye 2 |
| 13 | Apr 26 - May 02 | Final Run 1 |
| 14 | May 03 - May 09 | Final Run 2 |
| - | *May 10 - May 16* | *no class (makeup day)* |
| 15 | May 17 - May 23 | Projects due |

### Week 1: Introduction

**Read:**

* Syllabus (this page)
* Class website on Moodle [[here](https://moodle.adelphi.edu/course/view.php?id=142241)]

### Week 2: Instructional Design

**Read:**

* Nilson and Goodson (2018) [Applying cognitive science to online teaching and learning strategies](https://moodle.adelphi.edu/mod/url/view.php?id=3380072)
* Nilson and Goodson (2018) [Setting significant outcomes](https://moodle.adelphi.edu/mod/url/view.php?id=3380079) (optional)
* Nilson and Goodson (2018) [Designing a coherent course](https://moodle.adelphi.edu/mod/url/view.php?id=3380080) (optional)

### Week 3: Multimedia Theory

**Read:**

* Clark and Mayer (2016) [Applying the Multimedia Principle](https://moodle.adelphi.edu/mod/url/view.php?id=3380056)
* **one** of these chapters:
  + Clark and Mayer (2016) [Applying the Contiguity Principle](https://moodle.adelphi.edu/mod/url/view.php?id=3380057)
  + Clark and Mayer (2016) [Applying the Modality Principle](https://moodle.adelphi.edu/mod/url/view.php?id=3380058)
  + Clark and Mayer (2016) [Applying the Redundancy Principle](https://moodle.adelphi.edu/mod/url/view.php?id=3380060)
  + Clark and Mayer (2016) [Applying the Coherence Principle](https://moodle.adelphi.edu/mod/url/view.php?id=3380059)
  + Clark and Mayer (2016) [Applying the Segmenting and Pretraining Principles](https://moodle.adelphi.edu/mod/url/view.php?id=3380061)
  + Sweller, J. (2012). [Human cognitive architecture: Why some instructional procedures work and others do not.](https://psycnet-apa-org.libproxy.adelphi.edu/record/2011-11701-011)

### Week 4: Universal Design for Learning (UDL)

**Read:**

* Novak and Thibodeau (2016) [The case for better online course design](https://moodle.adelphi.edu/mod/url/view.php?id=3380048)
* Novak and Thibodeau (2016) [Fewer barriers, more support: UDL guidelines in action](https://moodle.adelphi.edu/mod/url/view.php?id=3380041)

**Due:** Narrated Tutorial

### Week 5: Platforms

Look through some possible platforms and pick one in which to design your online unit.

### Week 6: Assessment

**Read:**

Wiggins, G., & McTighe, J. (2005). [Chapter 1: Backwards Design](https://ebookcentral.proquest.com/lib/adelphi/reader.action?docID=3002118&ppg=25) in *Understanding by design*. Association for Supervision & Curriculum Development. - Veletsianos (2020). [The learner who cheated](https://ebookcentral.proquest.com/lib/adelphi/reader.action?docID=6134559&ppg=106) in *Learning online: The student experience*. Johns Hopkins University Press.

**Due:** Pandemic Report Topic and Teams

### Week 7: Presence

**Read:**

* Bender (2012) [Aspects of online communication](https://moodle.adelphi.edu/mod/url/view.php?id=3379997)
* Novak and Thibodeau (2016) [Cultivating “instructor presence” to support engagement](https://moodle.adelphi.edu/mod/url/view.php?id=3379998)

### Week 8: Adaptive Learning

**Read:** - [Intelligent Tutoring Systems and Online Learning](https://ai100.stanford.edu/2016-report/section-ii-ai-domain/education/intelligent-tutoring-systems-and-online-learning). In Peter Stone, Rodney Brooks, Erik Brynjolfsson, Ryan Calo, Oren Etzioni, Greg Hager, Julia Hirschberg, Shivaram Kalyanakrishnan, Ece Kamar, Sarit Kraus, Kevin Leyton-Brown, David Parkes, William Press, AnnaLee Saxenian, Julie Shah, Milind Tambe, and Astro Teller. “Artificial Intelligence and Life in 2030.” One Hundred Year Study on Artificial Intelligence: Report of the 2015-2016 Study Panel, Stanford University, Stanford, CA, September 2016. - Moskal, P. D. Carter & Dale Johnson [7 Things You Should Know About Adaptive Learning](https://library.educause.edu/-/media/files/library/2017/1/eli7140.pdf). *Educause.*

**Optional:**

* Aleven, *et al* (2017). [Instruction based on adaptive learning technologies](https://www.cs.cmu.edu/afs/.cs.cmu.edu/Web/People/aleven/Papers/2016/Aleven_etal_Handbook2016_AdaptiveLearningTechnologies_Prepub.pdf)
* Graesser, A. C., Conley, M. W., & Olney, A. (2012). Intelligent tutoring systems. In K. R. Harris, S. Graham, T. Urdan, A. G. Bus, S. Major, & H. L. Swanson (Eds.), *APA educational psychology handbook, Vol. 3. Application to learning and teaching (pp. 451–473)*. American Psychological Association.
* Xie, H., Chu, H. C., Hwang, G. J., & Wang, C. C. (2019). [Trends and development in technology-enhanced adaptive/personalized learning: A systematic review of journal publications from 2007 to 2017](https://www.sciencedirect.com/science/article/pii/S0360131519301526?casa_token=8U3YWX5lvFkAAAAA:CRnXdySXYB4zIjizAfsOGLB3RhBEWg-NLB8kdNH12qikBkxLJKiSP43sBfquImO-ftX2ewZKUQ). *Computers & Education*, 140, 103599.

**Due:** Remote Learning Report (paper and video by end of week)

### Week 9: Remote Learning 1

**Watch:** all of the *remote learning 1* videos.

### Week 10: Remote Learning 2

**Watch:** all of the *remote learning 2* videos.

### Week 11 & 12: Prototyping

**Due:** Present your Prototype and participate in three of your peers’ units.

### Week 13 & 14: Final Run

**Due:** Present your revised mini-unit and participate in three of your peers’ units.

### Week 15: Mini-unit due

**Due:** Turn in your final mini-unit.

## Assignments & Grading

| Assignment | Pct | Date Due |
| --- | --- | --- |
| Participation | 10% | ongoing |
| Narrated Tutorial | 20% | Feb 21 |
| Remote Learning Report | 25% | Mar 28 |
| Prototype | 15% | Apr 11 |
| Final Run | 30% | May 23 |

### Narrated Tutorial

Create a short (3-5 minute) standalone, narrated video tutorial or mini-lecture and upload it to YouTube. This video should be clearly narrated and thoughtfully designed, following the principles of Multimedia Theory and using an appropriate mix of multimedia (text, visual, audio, etc.) components. The topic is up to you, but it should be educational and/or informative. You may pick a topic that you might use for your mini-unit (see below) or in a future lesson, or you can choose a topic that you are expert in and enthusiastic to share with us. The video can easily be created using applications such as PowerPoint or Keynote, or a screencast application like [Open Broadcast Studio](https://obsproject.com/) (the software I use for screencasts), [Screencastify](https://www.screencastify.com/), [Quicktime Player](https://www.youtube.com/watch?embed=no&v=DEkEZnJe_Pc), [Explain Everything](https://explaineverything.com) or similar application. While you can use clips from other videos, don’t insert clips longer than 15-20 seconds.

### Remote Learning Report (pair)

The COVID-19 pandemic uprooted schools across the globe, at every level of learning. Public school systems struggled to move to online formats. University enrollments plummeted. “Essential” standardized assessments were postponed or canceled. Many open questions remain about the effectiveness of the various approaches to learning during the pandemic. In fact, we don’t have a clear picture, yet, of the whole spectrum of modifications that took place. For this project, you will investigate a particular aspect of remote learning during the pandemic and write a paper (1,500 - 1,800 words) with your findings. Examples of possible topics:

* “Meeting the needs of special education students through remote learning”
* “Who left higher ed due to COVID-19 and what did they do instead?”
* “A report on university efforts to maintain ‘community’ during lockdown and remote learning”
* “Models of remote instruction in K-12 schools: synchronous, asynchronous, learning pods, hybrid, and more”
* “Global models of remote education: report from North America, Europe, and Asia”
* “Lab sciences and the lockdown”

You paper will gather research that allows you to learn about and fully describe your topic. Start with newspaper articles and magazine articles (available for search through the [Lexis Nexis database](https://advance-lexis-com.libproxy.adelphi.edu/bisacademicresearchhome?crid=d0cc6122-24e3-49d5-8c7a-fa9cc4e362c4&pdmfid=1516831&pdisurlapi=true)). You can also incorporate primary sources such as school district announcements, state agency reports, social media posts from educators/students/parents, etc. Your paper should be organized into the following sections:

1. Introduction: describe the topic, why it’s important, what type of data you gathered
2. Analysis: review the news articles, reports, and other data that your investigation uncovered. Organize and synthesize the findings to offer a coherent look at the topic. Consider how “remote learning” in practice compares to our understanding of the best practices for online instruction.
3. Conclusion: extend your analysis to point to which approaches to remote learning were most effective, which should be avoided, and which areas need further research and refinement.

This paper should be a **pair project** – you will work with a partner to research and write the report.

Your team will submit the written report worth 20 points, and will also upload a 5-minute video report where you summarize your key findings and explain the core results of your paper. These videos will be shared with the class for comments and discussion during weeks

### Mini-unit

The online mini-unit constitutes the biggest part of your grade and is split into two phases: Prototype and Final Run. Together these will take up roughly the last four weeks of the semester. During the Prototype phase, you will run a rough and/or partial version of your mini-unit, and the rest of the class will enroll as students. We will give you feedback that you will use to revise for the Final Run, which will have to be polished. You will get feedback again that you can use to revise it one more time.

The mini-unit is a culmination of all the readings and assignments you did in this class. It should be a self-contained, complete unit that would take up roughly 3 hours of a student’s time. This means you shouldn’t have students watch a 3-hour long video or read a novel, as it would take up too much time; nor should it be too short. If your unit is intended for a younger audience, let us know and we can adjust our expectations. The mini-unit can be about something you might teach in class or it could be something fun that works well as an online unit. The unit should contain assessment(s) that checks for understanding. It should also contain some logical progression, so it shouldn’t be just a single lesson or tutorial. Finally, it should be designed for a minimum of 15 students. You won’t have that many enrolled in this class but it should be designed to accommodate at least 15 students.

[Prototype](https://docs.google.com/spreadsheets/d/1TlxSJKDV-6JW-5Fc098lPmqVaQn2LIs9bz-kq4xZvvQ)

In Week 11 and 12 we will prototype the courses. Half the class will be teachers for the week and the other half will be students in three courses. This way each course will have 3-5 students enrolled. The prototype should focus on the part of the lesson that is most experimental or has the most most open questions. You may need to test if your assessment is valid or if your activity instructions are clear, or whether a video or written instructional material is more effective. The prototype should be developed enough for us to evaluate whether it is headed in the right direction and whether it adequately reflects your understanding of the topics covered in the class. At the very least it should have activities to do and it should be built on a platform of your choice. As the unit designer, you will be in charge of running the unit as the instructor. If you are not presenting that week, then you should enroll in three of your peers’ units that week; this should give everyone plenty of feedback.

**Don’t use Edmodo**: Although some of you may be familiar with Edmodo, the way it is designed makes it difficult to differentiate between different classes. Here’s one done on [Weebly](http://gw730.weebly.com) that is quite well designed. Students have also used [Moodle Cloud](https://moodlecloud.com/), [Flipgrid](https://flipgrid.com/), [Google Classroom](https://classroom.google.com/), [Classcraft](https://www.classcraft.com), [Canvas](https://canvas.instructure.com/), and [Schoology](https://www.schoology.com/) in the past.

Your Prototype will be evaluated based on whether the part you presented was functional and ready; whether you had sufficient interaction with your students; and whether it demonstrated an understanding of design principles we discussed, especially Multimedia Theory and Universal Design. If you are a student, your participation will be evaluated by the unit designer; this grade will go towards your participation grade that week. Participating as a student means getting involved in the activities, not just looking at the website.

[Final Run](https://docs.google.com/spreadsheets/d/1EFCDxZjtj4s6aolxtieLJJm1dKHF7Un7G8M_-G6PhF8)

After your Prototype has run, go through the comments you received and list 3-5 of the main, recurring themes that you want to address. As the unit designer, you can choose to accept or reject any comments, provided you give a rationale. This should be turned in as part of your Final Run. (Write a summary of the comments and actions you took, about 500 words).

The Final Run will occur two weeks after you present your Prototype. That means if you presented your Prototype first, you will do the Final Run first as well. The upside of that is you will have a lot more time to polish it before you turn it in. It should be a fully functional mini-unit. Everything—the activities, the discussions, the assessments—should work. Your evaluation will be based on whether the mini-unit as a whole was cohesive, had a logical progression in topics, had meaningful assessments that let students know how they are doing, was thoughtfully designed and straightforward to navigate.

After your unit has run, collect the feedback again and do any additional revisions you want. You will turn in the mini-unit at the end of the semester. As with the Final Run, it should come with a short (1-2 pages double-spaced) description of what feedback you used or rejected. It should also point me to any changes you made since the Final Run.

**Design Tips**

Here are some tips based on previous classes:

* Think about the design: Simplify the way students interact with the course (e.g., uploading, taking screenshots, clicking around, etc.). Sometimes there are things within the platform itself that can make navigation easier. Don’t put the burden of organizing the learning on the students. Instead, do all you reasonably can to design the learning experience. For example, in this class, if you’re given a hyperlink to an eBook, the link will take you to the right page. Little things like this significantly improves the navigation. This often means more upfront design work on your part, but it’s worth avoiding confusion or frustration.
* Consider the online context: Your activities shouldn’t try to replicate the experience of a face-to-face (f2f) class. Think about how the online class transforms the activity. In some cases, your activity will have to be re-configured to fit the online environment; in other cases, you may have to find a different kind of activity.
* Don’t bind yourself to a daily schedule: Online classes don’t need to have a Monday-through-Friday schedule; they can be self-paced or they can have interactions that are more spaced out.
* Empathize the student’s journey: Imagine (at least) two kinds of students, one who will go to one end of the unit and go through it linearly and another who might skip around and see what’s out there. How will these two students experience it differently? If your unit is meant to be uni-directional, then design it that way and make the instructions clear.
* Provide multiple paths: Put your instructions in more than one place so that students won’t miss them. Make sure they are consistent.
* Make it sustainable: A common flaw in past mini-units is that they were designed for only the number of students they expected to enroll for this class. There would often be activities or interactions that clearly won’t accommodate a larger number. That’s why you’re asked to design it to accommodate at least 15 students.

### Participation

This is a graduate course where you are expected to complete weekly readings and fully participate in discussions in class and on Moodle. In order for the discussion to flow smoothly online, you should respond to the voicethread and forum discussion by the dates noted on the syllabus, and spend the remainder of the week responding to what your peers have posted. Your responses to your peers should be thoughtful, critical and substantive. Your participation grade will be based on the timeliness and quality of your posts, your responses to your peers, and any other activities that might be associated with the week. Your participation grade is given out on a weekly basis. You can track your participation grade on Moodle. For each week of the course you will earn either 0 or 1 points for participating in the course activities. In addition to these 15 points, you will have the opportunity to earn and extra 5 bonus points. Bonus points will be awarded for helping other students, starting discussions with thoughtful posts, and generally forwarding our shared goals for the course, beyond the regular class participation.