Mobile learning

Matthew X. Curinga

Dino Sossi

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**Educational Technology 0858-612, Spring 2021**

**Course description.** Most of the world connects to the Internet from mobile phones, most of the time. Android tablets and iPads are filtering into schools — and the hands of children. Augmented reality and location based software offer new opportunities for context aware learning. Students carry significant computing power in their pockets. This course considers how mobile computing forces us to reconsider the time and place of learning.

**Keywords:** mlearning, mobile learning, android, ipad, tablet computing, AR, augmented reality

 1951, Dick Tracy’s wearable computer

**Instructor:** [Matthew X. Curinga](https://matt.curinga.com), [mcuringa@adelphi.edu](mailto:mcuringa@adelphi.edu)

**Office hours:**

* Monday 2-4pm
* Tuesday 4-5pm
* *office hours by appointment*

## Goals & objectives

Students taking this course will develop an understanding of the ways that mobile technologies can be used for teaching and learning. They will also consider the impact of mobile computing on the field of education as a whole.

Students will:

* understand basic underlying mobile technologies, and their educational implications
  + network types and capacity
  + hardware speed, capabilities, and energy requirements
  + screen and display technologies
  + software development platform, including Web, SMS, and local “Apps”
  + GIS and location services, and how they can be used to augment learning
  + augmented reality technologies
* understand the specific strengths and constraints of mobile interactivity & design
* implement best-practices of teaching with wireless mobile technology
* reflect on how mobile computing challenges the traditional time and places of learning

## Weekly topics

*Readings, discussion forums, and other assignments are available on the course website under the weekly topic.*

**Zoom sessions: Wednesday 6:30-8:20** <https://adelphiuniversity.zoom.us/j/94673542355>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| week | date | topic | format | assignment |
| 1 | Jan 27 | Going mobile | zoom |  |
| 2 | Feb 03 | Mobile first | async |  |
| 3 | Feb 10 | Tech reports | zoom | tech report |
| 4 | Feb 17 | Mobile computing and society | async |  |
| 5 | Feb 24 | Cognition & Embodiment | zoom |  |
| 6 | Mar 03 | App Inventor hackathon | async |  |
| - | Mar 10 | *no class (mini break)* | - |  |
| 7 | Mar 17 | Augmented reality | zoom | app inventor |
| 8 | Mar 24 | 1:1 Computing | async |  |
| 9 | Mar 31 | Subject reports | zoom | subject report |
| 10 | Apr 07 | Mobile games for learning | async |  |
| 11 | Apr 14 | ARIS 1: location game design | zoom |  |
| 12 | Apr 21 | ARIS 2: build and test | async |  |
| 13 | Apr 28 | Reading screens | zoom | ARIS project |
| 14 | May 05 | UDL & Mobile Assistive Tech | async |  |
| - | May 12 | *no class (makeup day)* | - |  |
| 15 | May 19 | Mobile ID presentation | zoom | instr. design |

## Assignments & grading

|  |  |  |
| --- | --- | --- |
| Assignment | Pct | Date Due |
| Session leader | 10% | ongoing |
| Reading responses | 10% | ongoing |
| Tech report | 10% | Feb 10 |
| App Inventor app | 20% | March 17 |
| Subject Report | 10% | March 31 |
| ARIS app | 20% | April 21 |
| Mobile Instr Design | 20% | May 19 |

### Session leader (pair)

You or you and a partner will be responsible for leading a class session this semester. For async weeks, you will submit (to the instructor) an audio introduction to the readings and other materials; during zoom calls you will begin the session with a short introduction. Plan for about 10 minutes.

If you are leading an asynchronous class session, you will not submit your own reading response this week, but will play the role of moderator in our online discussion. You will ask follow up questions to posts and comments, connect students who address the same subjects but may not have seen each other, post to keep discussions on track (and civil if needed), and prompt/nudge your peers who seem to be falling behind.

If you are leading an live class class (via zoom), you will essentially be the seminar or workshop leader for that week. You should be very familiar with the readings and come to class with interesting questions and/or quotations from the texts that you believe will lead to fruitful discussions. If you are leading a workshop, you will work with the instructor to design activities for the rest of the class and you will present the tools and facilitate the activities.

### Reading Responses (solo)

For most asynchronous weeks you will be asked to post a *reading response* on Moodle. This is the main online interaction for this portion of this course. Your reading response should be approximately 500 words, but occasionally may call for more or less.

A good reading response:

1. specifically refers to the readings and other activities due that week: you will usually want to quote the texts and refer to specific passages,
2. your post will start a new thread in our discussion forum, it should have its own unique (and clever) title,
3. is not a *summary*, you should have a point of view and express your own synthesis, understanding, and opinion about the topic under discussion,
4. sometimes this will relate to courses you are taking now, your work, or your personal life,
5. sometimes this will relate to other things you have read or studied (this is okay, just give us a little bit of reference and a way to find more information),
6. is not a formal, academic post (you don’t need APA style references), but you should include links, titles, authors names, etc for outside readings/videos/works,
7. *is* intended for this course and your classmates so it should be **professional** in substance and tone, and
8. **is posted on time**

The general workflow for these online weeks follows:

1. (Wed-Sat) Do course readings
2. (Sat-Mon) Write & post a reading response
3. (Tues-Wed) Read all of the responses and post comments/discuss

In addition to your own response, you should check the discussion board daily. You are required to comment on at least two of your peer’s responses each week and you should respond to people who engage with you.

### Tech Report (pair)

Working in pairs, you will present a “Tech Report” on an aspect of mobile technology. Teams will prepare 10 minute presentation they will present in class. In the Moodle forum, each team will post a 1-paragraph abstract of their presentation and an annotated list of resources (e.g. websites, press, and scholarly articles) related to their topic. Annotations should only be a few sentences.

Grading for this assignment will take into account:

* written report on Moodle
* quality and importance of the subject matter
* quality of the presentation

Example topics:

* wireless networks (wimax, mesh networks, p2p networks, 5G/6G)
* near field communications (NFC)
* device hardware (chips screens, etc)
* mobile payments (Google Wallet, Apple Pay, etc)
* GIS/GPS & location
* beacons, RFID, etc
* iOS and Android Platforms
* mobile media (video, audio, animations, web/html/css, etc.)
* speech recognition, text-to-speech, voice interfaces
* facial recognition & computer vision
* AR technologies (Goggles, biometrics, development platforms, etc)
* IoT (microboards, dev platforms, uses, sensors, etc)
* mobile computing and assistive technology
* wireless/mobile security
* virtual assistants (Alexa, Google Home, etc)
* gesture interfaces

### App Inventor app (team)

Working in a team, you will design, develop, and test a mobile app built with MIT’s [app inventor software](https://appinventor.mit.edu/), which allows you to make mobile Android apps without writing any text-based code. We will all work on the same theme, which each team presenting their solution. The theme for the Hackathon will be determined by the class and the instructor. App Inventor apps only run on Android, but the software includes a simulator that any user can use from the web. The final product can be installed on an Android phone or tablet.

### Fieldday ARIS (team)

The [ARIS](https://fielddaylab.org/make/aris/) software platform allows you to create mobile games, and interactice tours through a graphical, web-based interface. Working with a team, you will design, develop, and test a location-based learning activity using ARIS. To test your app “in the field” you will need to work with someone (on your team, or another tester) who has an iPhone.

### Subject Report (solo)

For this assignment you will write a report about how mobile technologies are used in a specific domain of learning. Broadly, your report should focus on a subject area (e.g. mathematics, language learning, teacher professional development) or target group/setting (e.g. students with disabilities, higher education, museum education). Your report will include a written portion and then a visual presentation video where you demonstrate and discuss apps/mobile software related to your topic.

The written report should:

* describe the domain your researching, including an understanding of best pedagogical practices in general (without tech or mobile tech)
* include a literature review of relevant research in mobile learning (if you can’t find at least 3 good academic articles, you should choose a different topic)
* the lit review provides both a summary and a synthesis of the research
* describe the software that you will demo and discuss in your video (links to developer, brief summary, etc)

Your report *must* include specific screenshots (or embedded) videos of mobile apps that are related to the report, showing how they support (or hinder) learning objectives.

In class, you will take about 5 minutes to present your report and then answer questions related to the topic.

### Instructional Design Project (solo)

Gathering your new knowledge and skills with mobile learning and mobile technologies, you will design a mobile learning project. This “project” can be integrated into a formal school unit, where you use mobile learning to enhance teaching and learning. Alternatively, it can be an informal learning project, focused on a location (like a museum, historical site, or zoo) or a concept (like the [Movers and Shakers](https://www.moversandshakersnyc.com/) AR project which re-imagines the public monuments of New York). The project should include

* learning goals and assessments
* target audience
* mobile activities
* technologies

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