

Syllabus

CRCRTH 670: Thinking, Learning, and Computers

Spring 2018, hybrid course (online section class #10983, face-to-face section class #10326)

Mondays, 4:00-6:45pm ET, January 29 – May 7, 2018

Class meetings: UMass Boston, in Wheatley Hall, W04-170

Online participation: Zoom web conferencing

Instructor: Jeremy Szteiter

Contact: Jeremy.Szteiter@umb.edu, (617) 942-3580

Office hours: schedule appointment for conference at <https://jeremyszteitercct.youcanbook.me>

Course Format

Instructor-led, hybrid course with meetings on campus and online.

Catalog Description

This course considers the consequences of using computers to aid our thinking, learning, communication, and action in classrooms, organizations, and social interactions. Class activities acquaint students with specific computer-based tools, the ideas and research behind them, and themes for critical thinking about these ideas and tools.

Additional Course Information and Purpose

This course provides a framework for considering the ways that digital technology influences our critical and creative thinking as individuals and as members of social communities. This includes understanding how digital technology can support us in shaping environments where goals such as learning, collaboration, and organizational change are sought. While there are natural connections between digital technology and educational practice, the course assumes that our attention to “thinking, learning, and computers” extends beyond school settings and that we all have opportunities to teach and learn in many ways. Although certain tools and processes used in the course may make explicit reference to the field of education or classroom applications, this is not a course in educational technology, and therefore our focus is on the broader issues of thinking, reflection, and reasoning that become relevant with respect to digital technology as a presence in many parts of professional and personal life.

The course is defined by a key principle that serves as the base for much of the discussion, written work, and activity throughout the course. This principle is the following:

*The process of exploring the topic of 1) thinking, 2) learning, and 3) computers is enhanced through **theory-building**, in which seek to construct a **long-lasting general approach** that can be used any time that we need to make sense of the **complexity** in the general and specific*

relationships among these three fundamental areas. This is particularly true as digital technology evolves quickly and leads to ongoing shifts in the nature of this complexity.

This principle means that we seek not only to understand these relationships as they are now, but also to create approaches that we can use to examine these relationships in the future. In short, our class is structured to allow us to develop a framework that can support us as lifelong learners and thinkers as digital technology continues to change. Some underlying assumptions are implied, such as the following:

- The pace of change of digital technology is fast enough that it is difficult to predict how this will affect our lives and world in upcoming years;
- Specific aspects within the broad issues “thinking”, “learning”, and “computers” have many potential reciprocal cause-and-effect relationships (for example, how we think about digital technologies can influence how we use them and create new technologies, and the digital technologies that exist can influence how we think and learn, and the way that cause-and-effect happens can vary between different contexts);
- The work of theory-building involves putting the theories of others in tension with the observations that we’ve made through personal experience;
- Valuable insight can be gained by deliberately seeking out the points where issues become the most controversial, complex, ambiguous, or uncertain, or unresolvable, and then identifying what makes so; and,
- There are various ongoing controversies around thinking and learning and integration of digital technology (what should happen vs. what is happening; the benefits or drawbacks of uses of technology in a given setting and the consequences for critical or creative thinking, etc.). These controversies provide a rich space for *reflective practice*; that is, repeatedly reflecting on experience, making concrete changes to practices, testing and evaluating them, and revising the practices in a journal of continuous improvement.

Class activities, discussions, and written assignments engage students to understand and experience the relationships among these concepts, reflect upon their meaning, and then develop their own framework, which then can serve as a guide to support one decide when and how to apply concepts to practice in desired areas of work or life. Each student will also develop a self-defined project that helps them to make an explicit connection between their framework for understanding the course topics and their direct personal or professional goals.

The themes described below help us to focus our exploration throughout the course.

Notes about Preparation Assumed for this Course

Students do not need expert technical skill with computers to engage in this course, however, they should be willing to explore and experiment with a variety of new tools and processes that may be unfamiliar. The purpose of this course is not to gain mastery of specific forms of digital technology, but rather to discover if and how such tools may uncover new ways of viewing the world through computers and how that may influence our thinking. Because this is a hybrid course, all students (both face-to-face and online) should expect to spend some time working with computer-based tools and web sites.

Key Links

Zoom conferences: <http://tiny.cc/CCT670>

(for online students to attend class meetings, and for face-to-face students who may occasionally join small-group discussions with online students during class meetings)

Course wiki: <http://crcrth670-szteiter.wikispaces.umb.edu/>

(all course documents, assignments, and other materials; requires umb.edu login account)

Course Goals

Students will:

- Examine the opportunities and challenges that emerge when trying to support critical and creative thinking and learning in the digital age, and the consequences in professional and personal settings.
- Create an expert project based on your own interest that helps you to build your understanding of thinking, learning, and computers and consider real-world applications.
- Explore and experience a range of specific personal and collaborative computer-based resources that create new possibilities for thinking and exploring relationships between ideas, and determine how and when it is appropriate to use them in your own work.
- Critically evaluate various interpretations and conclusions presented in academic and popular published sources about the relationships between thinking, learning, and computers, and identify strengths and weaknesses of the arguments being made.

Texts and Materials

Readings: Each student will choose ONE of the following two books according to their own interest and will need to obtain a copy for personal use (used print copies or digital copies are available for reasonable costs from online booksellers). Both of these books explore contemporary issues in thinking, learning, and computers and will be used to support discussions that happen throughout the semester. Students may wish to read summaries or reviews of these books and then choose one before the course begins if desired, but these will be discussed on the first day of class, and so it is also ok if you wait until then to decide which one to get, since they won't be required immediately.

- Thompson, C. (2013). *Smarter than you think: How technology is changing our minds for the better*.
- Turkle, S. (2015). *Reclaiming conversation: The power of talk in a digital age*.

Other requirements:

1. Other readings from academic or popular sources will be assigned weekly and will be provided in digital format through the course wiki or through library eReserves.
2. Face-to-face students are encouraged to bring a laptop or other device for completing web-based activities that are assigned during class meetings (by signing in to the campus wireless network). If you don't have a device, arrangements may be made in class for you to share with others or find alternate ways to try the activities.

3. Our live meetings through Zoom will require the use of a webcam, speakers and a microphone and a reliable (i.e. wired) Internet connection.
4. Some course communications are sent by email to your umb.edu address. Please make sure that you are regularly checking your umb.edu account or have it set up to automatically forward messages to a personal account that you use often.

Weekly Schedule of Class Meetings

Please note the class meeting schedule below. Class meetings on Monday introduce our concepts and materials, but on Mondays when we don't meet, students will access the course wiki and work through the activities on their own throughout that week. Homework assigned on a given Monday are typically due the following Monday by the start of class. Some assignments will have longer timelines and will be described in the course materials. Instructor comments are typically returned within one week.

Week	Summary of Expected Topic/Themes
Week 1	<i>Class meeting on 1/29, 4:00-6:45pm</i> Course introduction and overview; Thinking Through Information Literacy
Week 2	<i>Class meeting on 2/5, 4:00-6:45pm</i> CCT program visit; Thinking Through Information Literacy
Week 3	<i>Class meeting on 2/12, 4:00, 6:45pm</i> Thinking Through Information Literacy
Week 4	<i>No meeting on 2/19 (holiday). Complete all work independently</i> Computers, Collaboration, and Connectivism
Week 5	<i>Class meeting on 2/26, 4:00-6:45pm</i> Computers, Collaboration, and Connectivism
Week 6	<i>Class meeting on 3/5, 4:00-6:45pm</i> Computers, Collaboration, and Connectivism
	<i>No meeting on 3/12 (spring break). No new work assigned.</i>
Week 7	<i>Class meeting on 3/19, 4:00-6:45pm</i> Computers, Collaboration, and Connectivism
Week 8	<i>Class meeting on 3/26, 4:00-6:45pm</i> Computers in Learning, Teaching, and Beyond
Week 9	<i>Class meeting on 4/2, 4:00-6:45pm</i> Computers in Learning, Teaching, and Beyond
Week 10	<i>Class meeting on 4/9, 4:00-6:45pm</i> Computers in Learning, Teaching, and Beyond
Week 11	<i>No meeting on 4/16 (holiday). Complete all work independently</i> Computers, Minds, and Brains
Week 12	<i>Class meeting on 4/23, 4:00-6:45pm</i> Computers, Minds, and Brains
Week 13	<i>No meeting on 4/30. Complete all work independently</i> Computers, Minds, and Brains
Week 14	<i>Class meeting on 5/7, 4:00-6:45pm</i> Course review and evaluation

Schedule of Course Sessions

Generally, we will move through four (overlapping) themes related to thinking, learning, and computers, described below.

Theme 1: Thinking Through Information Literacy

Weeks 1-3

We explore the idea of information literacy with respect to the way that abundant information becomes accessible through computer-based resources, and how the access to information has the potential to influence thinking and learning. In particular, we seek to relate critical thinking to information literacy by extending the idea of simply finding and evaluating information to understanding how computers, digital consumption, and the span of digital media, allow us to experience different ways of knowing. Additionally, we will consider how the connections between information and thinking can introduce us to the possibilities of new practices in working, learning, and living. An issue at the core of our inquiry is how to develop a strategy and practices for handling information made available to us through digital resources, especially with the likelihood that information access and availability will continue to evolve quickly in ways that we may not yet anticipate.

Theme 2: Computers, Collaboration, and Connectivism

Weeks 4-7

Particularly due to the expansion of the Internet and World Wide Web, computers become powerful resources for connecting with others on a number of levels. Building upon themes of information literacy, we will consider how our thinking and learning are influenced when we can access not only the basic information of the world but also the minds of others across wide regions and communities aided by computers. In doing so, we will examine the nature of collaboration involving tools and systems that bring us in contact with others in ways that can lead to changes in how we think and learn, when compared to traditional ways of connecting with people. An issue at the core of our inquiry is the way that the computer enables new social connections, and the implications to thinking and learning.

Theme 3: Computers in Learning, Teaching, and Beyond

Weeks 8-10

In addition to the way that computers can support collaborative thinking, they can also be used as specific tools that can shape information in ways that allow us to view it differently and find unique understanding. Computers present information not only in the form of the written word but also through a number of visual representations. Also, many computer applications and resources claim to directly support learning and even enhance critical and creative thinking. We will explore this idea and examine if, why, and how computers try to accomplish this in ways that are not possible in non-computer approaches. Rather than addressing matters of educational technology, where we might focus on the mechanics of how to implement educational curricula through computer-based learning and teaching tools, we instead focus on developing an ethic for the “why” and “when” of using computers in learning, teaching, and other fields when consequences on thinking and learning are at stake. An issue at the core of our inquiry is the potential of maximizing improvements to thinking and learning by making appropriate choices around computer use in educational and professional endeavors, and with the idea

that we are all learners and teachers (i.e., even those who are not professional teachers have various roles over time involving guiding others to learn, where digital technology becomes part of the process).

Theme 4: Computers, Minds, and Brains

Weeks 11-13

Trends and advancements in thinking, learning, and computers often raise questions of “intelligence”, where computers are designed to mimic the problem-solving and decision-making ability of people, and then go beyond it. We will examine what happens as computers are designed to represent human thinking and then may even offer insights into what is not yet understood about human thinking. We’ll also imagine how the culture of thinking and learning might change as computer technology becomes more integrated into life. An issue at the core of our inquiry is the opportunity for individuals and communities to take ownership of the degree to which we do our own thinking or employ computers to do it for us.

Assignments and Requirements

Written assignments are submitted through your personal dropbox page (see the course wiki once the course begins). All assignments must be submitted in Microsoft Word (.doc or .docx) or Adobe (.pdf) format; please convert any other file formats to one of these types.

For assignments involving discussion board responses, the responses that count for grading purposes are the ones that provide a “value-added” to the discussion. For these responses, it is not enough to write on a discussion post that you agree or disagree with someone else. Explain why and elaborate on your reasoning, using an example, if appropriate – these add value to the discussion and extend the discussion by building upon previous ideas.

Graded Requirements

A. Prepared class attendance and participation (30%), including:

- arriving to class meetings on time and staying for the duration of the meeting
- completion of all readings
- active participation in all class meeting activities and discussions
- supporting the development of the course community and process through a) relevant and respectful contributions to discussions, b) thoughtful and substantive responses through peer commentary (as assigned), and c) a spirit of experimentation and seeking opportunities to facilitate positive solutions to challenges that arise in a hybrid-format course

B. Written assignments (40%), including:

- On-time, complete submissions of weekly homework assignments
- Posting written comments and responses on course discussion boards/blog based on readings

C. Mid-term Critical Reflection Paper (10%)

D. Expert project (20%), including:

- Portfolio

- Process essay
- Class presentation and related follow-up activities (typically given in weeks 8, 9, or 10)
- Log entries on week-to-week expert project development

Students should expect to spend up to about 9 hours per week on this course (2.75 hours for the class meeting; 2 hours reading; 2-4 hours for weekly assignments and written discussions and papers, including time spent developing the expert project in later weeks).

Late Assignment Policy

No formal extensions are granted for late work, although late submissions are accepted up to one week after the due date, for up to half credit. For submissions received more than one week after the due date, these will receive no credit for grading, but any such submissions will be considered at the end of the course if they would raise an otherwise borderline grade. It is best, then, to keep up with current work and then go back to missed assignments if there is time.

Exceptions:

1. Some assignments involve written discussion board posts (writing your own posts, reading and responding to others). Such assignments are time sensitive because they become much less meaningful if completed after the due date when others are no longer likely to have a chance to appreciate them. In these cases, credit is earned only for on-time completion, and no credit if any amount of time late.
2. Late work can be accepted with full credit in cases of documented medical or other emergencies. You must make such requests to the instructor before the due date.

Weekly assignments will be returned with instructor comments and reference that the assignment is Complete or needs Revision. If you are asked to Revise, please review instructor comments and resubmit the work accordingly. You may resubmit assignments as many times as needed to reach the Complete level, as long as they are initially submitted on time with a clear attempt to fulfill the requirements.

Returned assignments/assignment notes may refer to the rubric below to identify the request for revision:

1: Not submitted or only superficial work done	2: Submitted but incomplete	3: Submitted and complete, but needs revision (=Revise)	4: Complete
Assignment was not submitted, or not enough was finished to	Assignment was submitted but does not fulfill minimum	Assignment was submitted and meets technical requirements,	Submission that meets or exceeds minimum requirements and

give evaluation.	requirements or is missing parts.	but some parts may need further clarification or elaboration.	includes explanations of your reasoning and/or thoughtful response to previous instructor or peer comments.
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The nature of some of the assignments may be adjusted during the semester, based on student interest and any emerging innovations from in the computer/digital world, but amount of work assigned will stay within the requirements listed here. Please inform the instructor about any concerns or questions that you may have about completing the work. The final grade is determined by calculating the proportion of work that has reached the Complete level within each type of the Graded Requirements above and then adding them up. These are then converted to letter grades as follows: The minimum grade for A is 93 points, for A- is 87, for B+ is 80, for B is 74; for B- is 67; for C+ is 61; and for C is 50 points.

Special Projects

Two special projects will be assigned in addition to the regular weekly activities and assignments:

Mid-term Reflection Paper (1200-1400 words): A written reflection where you reflect upon the first half of the course (process and content), identify questions and insights encountered, and further explore concepts that you have found particularly meaningful.

Expert Project (1800-word process essay + portfolio of exhibits + class presentation) Throughout the second half of the course, you will work toward an expertise on a specific concept related to thinking, learning, and computers and build a portfolio that represents your growing understanding, with the intent that the portfolio would be useful as a learning resource to be used by someone who wished to teach or learn about your concept.

Generally, the topic that you choose will have the following qualities:

- It will involve some aspect of thinking, learning, and computers as positioned within a specific context, perhaps with respect to a direct issue or concern in your work or life.
- It will likely involve some element of *active* controversy; that is, the connection between digital technology and thinking will be one where there is not necessarily agreement or even clear understanding of consequences (and part of your work will be to identify and summarize how multiple stakeholders might have differing perspectives around the connection)
- It will involve a theoretical/philosophical inquiry around the topic as well as a practical/concrete one. That is, you'll be exploring purpose and values related to the issue as well as the functional/"how-to-implement" side. For example, you might be exploring the potential for video games to enhance critical thinking for young people as part of educational practice, or you might be exploring the role of the Internet in increasing the sharing/access to creative work and the implications for artists and their audiences, or you might be exploring the use of social media for helping communities support multicultural awareness among the general public. Part of your exploration may be to gain understating about why such connections present both new opportunities and unexpected challenges.

The components of the project to be submitted will include a process essay to be submitted at the end of the semester, a brief presentation to the class on your work during a class meeting, and a portfolio of

exhibits that you will develop throughout the semester, which might include some (but not necessarily all) of the following exhibits: an annotated bibliography of references, a lesson plan to be used in a workshop, an instructional video that gives a demonstration of the resource, a digital story that conveys something about the concept, a web site or wiki page that builds a collection of knowledge about the resource, a creative product that teaches someone about the concept, and many others. You will create the portfolio and share this with others in the course. Several of the in-class and take-home written activities throughout the semester will help you to take steps toward the Expert Project.

Reflective Practice Portfolio

Either the Mid-term Reflection Paper, or the Expert Project essay component may be appropriate for students in the Critical and Creative Thinking program to be used for that program's required Reflective Practice Portfolio. Other options might also be acceptable based on directions taken toward the Expert Project.

Course Evaluation

At the end of the course, you will be asked to complete an anonymous, online course evaluation (<http://bit.ly/CCTEval>) as required by the Critical and Creative Thinking program. This evaluation is in addition to any other general evaluations requested of you by the university or College of Advancing and Professional Studies.

Accommodation Statement

Sections 504 and the Americans with Disabilities Act of 1990 offer guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center (617-287-7430). The student must present these recommendations to each professor within a reasonable period, preferably by the end of the Drop/Add period.

Instructor Background and Experience

Jeremy Szteiter is a graduate of Carnegie Mellon University (Cognitive Science) and University of Massachusetts Boston (Critical and Creative Thinking) and now serves as the Assistant Director of the graduate program in Critical and Creative Thinking at UMass Boston. His work has centered on teaching and program development, particularly in adult education settings within community-based human services organizations; this work has involved managing, developing, and teaching programs to lifelong learners and performing research around teaching practices, non-profit organizational development, and technology. Jeremy's work draws upon principles and practices of social change pedagogy, technology-enhanced collaboration, instructional design, and participatory theater.

Syllabus Version

January 2018; This syllabus is subject to change and updated versions may be distributed after the course begins, but the workload expectations will not be increased after the semester starts.