

Fall 2018
CORE 1929H-905/906: METHODS OF INQUIRY
Thematic Title: *Math Anxiety and the Mind*
T 12:30 – 1:45 PM

Science Literacy

Instructor: Allison L. Abbott, Ph.D.

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Cultural and Media Literacy

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Office Hours: T/Th 8:45 AM – 9:15 AM, Th 12:30 PM – 2:00 PM, or by appointment

WHAT IS CORE 1929H?

“Methods of Inquiry” is one of only five courses that *all* Marquette students take, and is intended to give you a glimpse into the wide variety of intellectual investigations that are happening across the university. The idea for CORE 1929 emerges out of Marquette’s recent redesign of its “core curriculum”; in fact, you are the first cohort of students to take the course. The previous core curriculum had tended to silo different academic disciplines within their own individual courses, constructing an intellectually diverse curriculum primarily through the juxtaposition of distribution requirements; in contrast, the new Core loosens those requirements, and chooses instead to put multiple disciplinary perspectives together *within* courses, in an effort to promote shared conversations and collective interests across the university while also allowing students more freedom to define a course of study that truly matters to them. “Methods of Inquiry” is the start of that process; by investigating a single topic from multiple perspectives and approaches, it is an opportunity for you to gather together as emerging scholars to figure out what you think defines (and what should define) academic inquiry in the twenty-first century. The conversations we begin here will, we hope, ripple in various ways across all the courses you take at Marquette.

Because you are honors students, your course is designated with an “H”; what this means for you is that the course is a year-long course, as opposed to a single semester course, earning you 1.5 credits each semester. Consequently, we will continue the conversation from this semester together in the spring, extending our exploration into new terrain and building towards the production of a major final research project on the themes of the course at the end of the year.

COURSE TRAJECTORY

The theme that has been selected for this version of CORE 1929H is “math anxiety and the mind.” We will use the concept of “math anxiety”—once defined by Mark H. Ashcraft as “a

feeling of tension, apprehension, or fear that interferes with math performance”—as the case study for our larger investigation into how the sciences, the humanities, the media, and mass culture produce knowledge and then present that knowledge to various audiences. The course will be taught by two instructors, one from the sciences and one from the humanities, who will each focus on establishing and developing the skills native to their mode of scholarship.

In the **Science Literacy** portion of this class, we will do the following things: (1) learn some foundational information about the mind and anxiety; (2) read articles from various sources, summarize the information, and evaluate the strength of the sources; (3) learn about experimental methods and data analysis used in the study of the mind and anxiety; and (4) communicate scientifically informed opinions and positions through discussions and writing assignments.

Through this, we will work on the skills involved in the *process* of science. How do we ask questions? More importantly, how do we ask the *right* questions? How do we seek answers through observation and experimentation? How do we evaluate the significance of such answers? How do we use this new information to how we think and how we make decisions? My hope is that learning more about the process of scientific methods of inquiry will be useful to you beyond this course, throughout your time at Marquette and into the future.

In the **Cultural and Media Literacy** portion of the course, we will (1) explore competing cultural narratives about the brain and the mind; (2) look to disability studies as a scholarly framework that might unite science and humanities approaches to the brain; (3) explore the way different narratives about anxiety and disability circulate in mass media popular culture, especially with respect to the so-called “Millennial” generation; (4) use cultural and media study to develop your skills for careful reading and clear writing.

Through these assignments we will come to better understand the fraught relationship between producers and consumers of cultural texts, and consider the responsibilities inherent in both creators and audiences. We will explore how social narratives are constructed and how they circulate in the culture at large, and examine the philosophical and cultural assumptions behind the different ways we talk about our own minds in the contemporary moment.

In short, we hope this class will inspire you to interrogate, in various ways, the scientific and cultural environment in which you have been swimming your entire lives.

Imagine that you enter a parlor. You come late. When you arrive, others have long preceded you, and they are engaged in a heated discussion, a discussion too heated for them to pause and tell you exactly what it is about. In fact, the discussion had already begun long before any of them got there, so that no one present is qualified to retrace for you all the steps that had gone before. You listen for a while, until you decide that you have caught the tenor of the argument; then you put in your oar. Someone answers; you answer him; another comes to your defense; another aligns himself against you, to either the embarrassment or gratification of your opponent, depending upon the quality of your ally's assistance. However, the discussion is interminable. The hour grows late, you must depart. And you do depart, with the discussion still vigorously in progress. —Kenneth Burke, “The Philosophy of Literary Form”

COURSE LEARNING OUTCOMES

At the end of the first semester of this Methods of Inquiry course, students will be able to:

- demonstrate understanding of the scientific, philosophical, and mass-cultural foundations of contemporary thought about anxiety;
- apply techniques of critical analysis to a variety of cultural documents, including scientific research, scholarly treatises, and mass-cultural productions;
- interpret and evaluate such documents via a variety of methodologies and critical perspectives;
- participate in ongoing debates about the mind within the academy and in society at large;
- analyze how our understanding of the world is observed, evaluated, and constructed through science and the media;
- reflect upon their personal history of education and schooling.

MARQUETTE CORE CURRICULUM OUTCOMES

Students who complete the full two-semester CORE 1929H course sequence will be able to:

- demonstrate an understanding of how different disciplinary methods of inquiry approached the selected course themes, and of the similarities and differences between them;
- articulate what specifically appealed or did not appeal to them about these particular approaches;
- reflect on what this tells them about themselves: their individual strengths and weaknesses, intellectual tendencies, curiosities, etc.;
- demonstrate the skills of media and scientific literacy and numeracy sufficient for personal decision-making and participation in civic and cultural affairs.

REQUIRED TEXTS

All course materials will be distributed via D2L.

COURSE REQUIREMENTS

“Math Memoir” and “Math Memoir Revisited”	10%
D2L Discussion Posts (Science Literacy)	15%
Module One Online Activity on Genes (Science Literacy)	10%
Class Participation (15% for each portion of course)	30%
D2L Discussion Posts (Cultural and Media Literacy)	15%
Module Two “Thinkpiece” on “Millennials” (Cultural and Media Literacy)	10%
Final Group Project	10%

GRADING

Grades will follow the following rubric:

* To earn a C, you must clearly restate the meaning of a document in your own terms. A C project may volunteer an original argument but will likely lack evidence or analysis of its sources. C responses are clearly written, though they might display some grammatical weakness.

* To earn a **B**, you must begin to raise important questions about the concept under consideration and to use those questions to drive your own interpretive agenda. A B project typically advances an original argument and provides solid analysis of the text(s) under consideration. B responses are clear, concise, and free of errors.

* To earn an **A**, you must construct a response that does more than simply comment on the work of others; you must forward, counter, or transform what they have to say. An A project advances an original argument that builds toward a climax and makes a persuasive case for its own significance. A responses are clearly written, and often eloquent.

* A **D** means that you have not communicated clearly or that you seem to have deeply misunderstood the source text. An **F** means that you did not fully or seriously engage the assignment.

* **A-, B+, B-, C+ (and so on) grades** fall in the gaps between the above categories.

ATTENDANCE AND CLASS PARTICIPATION

Class discussion is an essential component of this seminar. It is crucial that you come to class every day having read the required material and prepared to discuss it. **Consequently, attendance in this class is mandatory.** You should plan on attending every class. Please talk to us (in advance if possible) if you ever find you will need to miss a class meeting.

The course adheres to Marquette University's attendance policy, which can be found on the Internet at <http://bulletin.marquette.edu/undergrad/academicregulations/#attendance>.

You are allowed **two unexcused absences** over the course of the fall semester. **After that, your class participation will drop by half a letter grade for each additional unexcused absence.** Upon the seventh unexcused absence, you may receive a WA (Withdrawn—Excessive Absences) for the semester.

Merely being present in class is insufficient for an “A” in class participation. Each student is expected to *participate in* and *contribute to* our discussions. Just being in the room is not enough.

FORMAT OF WRITTEN WORK

Your math memoir, Millennials thinkpiece, and final reflective essay should be typed in twelve-point font, double-spaced with one-inch margins, saved in a format Microsoft Word can open. Your filename should contain *your name* in it, for example, yourlastname-finalpaper.docx.

These assignments should be assigned via D2L Dropbox; except in very unusual circumstances, work will not be accepted by email. Please give your papers an original title, and include your name, assignment, and due date in a header on the first page. All sources relied upon for the writing of your paper must be appropriately cited.

For the science literacy D2L Discussion Posts, you will be expected to address the specific set of questions assigned. It's generally a good idea to write (and edit!) your posts in a separate document and then copy it to D2L. There will be no length requirements for D2L posts. For full

credit, your posts should incorporate information from the assigned content (articles, videos, etc.) or refer to the content in a way that can demonstrate comprehension. Your posts should be written clearly, be informed by the assigned material, and should demonstrate your thinking and opinions.

We expect you to *edit* and *proofread* all written work, even forum comments. Drafts that contain excessive typos or grammar mistakes may be returned to the author for correction before we offer comments.

TECHNOLOGY IS TERRIBLE: PLAN AHEAD!

The Internet goes down. Files become corrupted. Computers crash. These are predictable facts of twenty-first century life, not emergencies. For this course, for all your courses, for the rest of your career and your life in this world you need to develop work habits and strategies that take into account the basic, inescapable unreliability of computers. Start your assignments well in advance of the due date; save them often; save backup copies of essential documents, including copies off-site using a service like Carbonite, Dropbox, or Google Drive.

EMAIL

Students in this class are required to check their official Marquette email account—whatever account D2L sends its emails to—at least once a day, in case there are any last-minute announcements or disruptions. We endeavor to respond to all emails within 24 hours, usually much less—but please do not send us urgent emails regarding your assignments on the night before they are due and expect an immediate reply.

LAPTOP POLICY

In-class use of laptops, Kindles, iPads, etc. is permitted for access to electronic versions of our texts and for notetaking. However, students *must* refrain from non-class-related computer use, including email, instant messaging, Facebook, Twitter, and the like. **Please do not abuse this privilege or distract your fellow students.** We reserve the right to ban individual technological devices if this becomes a problem. Except in unusual cases of personal emergency, cleared with me at the start of class, no use of cell phones will be permitted during class time; please turn off your ringers and put them out of sight.

FLEXIBILITY

If it will benefit the class, changes may be made to the above.

WRITING CENTER

Students are strongly encouraged to make use of the Writing Center, located in Raynor Library Room 240, at any stage of the writing process. Please visit the Writing Center website at <http://www.marquette.edu/english/writingcenter/> to find out how to schedule an appointment and to access the studio's online resources.

ACCOMMODATIONS

Students with disabilities who believe they may require accommodations in this course should contact us early in the semester so your learning needs can be appropriately met.

We are of course more than happy to work with you to make sure you are successful in this course and to make this course most accessible for you. However, without documentation, we are limited in what we are able to do. Therefore, in order for us to help you most effectively, we need you to be proactive in contacting Marquette University's Office of Disability Services (located on the fifth floor of the 707 Building). ODS can be reached by phone at (414) 288-1645 or by email at ods@marquette.edu.

ACADEMIC DISHONESTY

Students are expected to abide by the academic honesty policy outlined in your undergraduate bulletin. We urge you all to examine this material and consult me with any questions you may have about plagiarism or academic integrity *before* it becomes an issue.

Ignorance of what constitutes plagiarism is not an acceptable excuse for plagiarism. **Academic dishonesty of any kind will not be tolerated and will result in a failing grade for the course.** No exceptions or special dispensations will be made.

Marquette students now sign an Honor Pledge, which states:

*I recognize the importance of personal integrity in all aspects of life and work.
I commit myself to truthfulness, honor, and responsibility, by which I earn the respect of others.
I support the development of good character, and commit myself to uphold the highest standards of academic integrity as an important aspect of personal integrity.
My commitment obliges me to conduct myself according to the Marquette University Honor Code.*

Full details of Marquette's academic integrity policy are available on the Internet at <http://www.marquette.edu/provost/academic-integrity.php>.

On a personal level, we (like everyone) hate being lied to. Please, do not feel you need to concoct elaborate stories. Simply be honest with us about whatever is going on and we will work it out.

ACADEMIC FREEDOM

We all enter this classroom with preexisting political, ethical, philosophical, and intellectual commitments. You are all required to engage the material—but you are absolutely *not* required to agree either with any of the writers we will discuss, or with us, in whole or in part.

RESPECT

This classroom is a community. It is crucial that we treat each other with the appropriate level of courtesy and respect. No one should be made to feel unwelcome here. Failure to treat other students with the respect they deserve will **severely** impact your class participation grade.

KEEP THE LINES OF COMMUNICATION OPEN!

We want this class to be a meaningful and valuable experience for you, both in its own terms and in service of the development of your larger college experience. If you have any ideas, suggestions, or concerns about the way things are going, our doors are always open.

TWO DEFINITIONS

Science Literacy, as defined by the National Science Education Standards

(<https://www.nap.edu/read/4962/chapter/1>)

Scientific literacy is the knowledge and understanding of scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity. It also includes specific types of abilities. In the *National Science Education Standards*, the content standards define scientific literacy.

Scientific literacy means that a person can ask, find, or determine answers to questions derived from curiosity about everyday experiences. It means that a person has the ability to describe, explain, and predict natural phenomena. Scientific literacy entails being able to read with understanding articles about science in the popular press and to engage in social conversation about the validity of the conclusions. Scientific literacy implies that a person can identify scientific issues underlying national and local decisions and express positions that are scientifically and technologically informed. A literate citizen should be able to evaluate the quality of scientific information on the basis of its source and the methods used to generate it. Scientific literacy also implies the capacity to pose and evaluate arguments based on evidence and to apply conclusions from such arguments appropriately.

Individuals will display their scientific literacy in different ways, such as appropriately using technical terms, or applying scientific concepts and processes. And individuals often will have differences in literacy in different domains, such as more understanding of life-science concepts and words, and less understanding of physical-science concepts and words. Scientific literacy has different degrees and forms; it expands and deepens over a lifetime, not just during the years in school. But the attitudes and values established toward science in the early years will shape a person's development of scientific literacy as an adult.

Media Literacy, as defined by the Center for Media Literacy

(<http://www.medialit.org/reading-room/what-media-literacy-definitionand-more>)

The definition most often cited in the US is a succinct sentence hammered out by participants at the 1992 Aspen Media Literacy Leadership Institute: "... the ability to access, analyze, evaluate and create media in a variety of forms." Definitions, however, evolve over time and a more robust definition is now needed to situate media literacy in the context of its importance for the education of students in a 21st century media culture. CML uses this expanded definition:

- Media Literacy is a 21st century approach to education.
- It provides a framework to access, analyze, evaluate and create messages in a variety of forms - from print to video to the Internet.
- Media literacy builds an understanding of the role of media in society as well as essential skills of inquiry and self-expression necessary for citizens of a democracy.

...Media literacy, therefore, is about helping students become competent, critical and literate in all media forms so that they control the interpretation of what they see or hear rather than letting the interpretation control them.

WHERE DO I GO WHEN?

This course is taught by two instructors, who have chosen to interweave our instruction to produce better synthesis between our material. As a result, you will be switching classrooms every three weeks to meet with the other instructor.

If you go on CheckMarq, you can see whether you are in section 905 or 906 based on the last three digits of the course number on the schedule. You will stay in the same numbered section the entire fall semester and will switch as a group between the two instructors. Please consult the detailed week-by-week schedule for your assigned section for your responsibilities on any particular day of the course.

Complicating matters further, this class uses a shared D2L site for *both* sections. You have been assigned a group with your section only, and will not be able to see discussion posts or assignments from the other group.

DATE	SECTION 905	SECTION 906
INTRODUCTION TO THE COURSE		
T Aug 28	Abbott, Straz Hall 356 WRITING ASSIGNMENT “Math Memoir”	Canavan, Cudahy Hall 108 WRITING ASSIGNMENT “Math Memoir”
T Sep 4	Canavan, Cudahy Hall 108	Abbott, Straz Hall 356
MODULE ONE: THE BRAIN AND THE MIND		
T Sep 11	Abbott, Straz Hall 356	Canavan, Cudahy Hall 108
T Sep 18	Abbott, Straz Hall 356	Canavan, Cudahy Hall 108
T Sep 25	Abbott, Straz Hall 356	Canavan, Cudahy Hall 108
T Oct 2	Canavan, Cudahy Hall 108	Abbott, Straz Hall 356
T Oct 9	Canavan, Cudahy Hall 108	Abbott, Straz Hall 356
T Oct 16	Canavan, Cudahy Hall 108	Abbott, Straz Hall 356
MODULE TWO: TREATING ANXIETY		
T Oct 23	Abbott, Straz Hall 356	Canavan, Cudahy Hall 108
T Oct 30	Abbott, Straz Hall 356	Canavan, Cudahy Hall 108
T Nov 6	Abbott, Straz Hall 356	Canavan, Cudahy Hall 108
T Nov 13	Canavan, Cudahy Hall 108	Abbott, Straz Hall 356
T Nov 20	Canavan, Cudahy Hall 108	Abbott, Straz Hall 356
T Nov 27	Canavan, Cudahy Hall 108	Abbott, Straz Hall 356
FINAL THOUGHTS		
T Dec 4	GROUP PROJECT PRESENTATIONS Combined Sections Location TBA	GROUP PROJECT PRESENTATIONS Combined Sections Location TBA
F Dec 14 by 5 PM	REFLECTIVE ESSAY “Math Memoir Revisited” DUE BY D2L DROPBOX	REFLECTIVE ESSAY “Math Memoir Revisited” DUE BY D2L DROPBOX

CORE 1929H-906: METHODS OF INQUIRY
 Week-by-Week Schedule

DATE	LOCATION	TOPIC
INTRODUCTION TO THE COURSE		
T Aug 28	Cudahy 108	FIRST DAY OF CLASS Introduction to the Course (Cultural and Media Literacy) writing assignment: “Math Memoir”
T Sep 4	Straz 356	Introduction to the Course (Scientific Literacy) “Math Memoir” discussion
MODULE ONE: THE BRAIN AND THE MIND		
T Sep 11	Cudahy 108	C.P. Snow, “The Two Cultures” Edward Slingerland, “Mind-Body Dualism and the Two Cultures”
T Sep 18	Cudahy 108	Helen Meekosha and Russell Shuttleworth, “What’s So Critical about Critical Disability Studies?” <i>case study</i> : PBS.org, “Stories of the Mind: Beating Anxiety”
T Sep 25	Cudahy 108	<i>case studies continue</i> cbc.ca, “How Anxiety Around Math Hurts Student Performance” cbc.ca, “Children Catch Math Anxiety from Parents” cbc.ca, “Anxiety Can Make You Bad at Math”
T Oct 2	Straz 356	History of observational and experimental research, and methods used in the field of Neuroscience
T Oct 9	Straz 356	The brain from neuron to neocortex
T Oct 16	ONLINE!	Genes involved in anxiety and mental health. Class will not meet! See D2L module for full instructions.
MODULE TWO: TREATING ANXIETY		
T Oct 24	Cudahy 108	George Lakoff, “Don’t Think of an Elephant” (excerpt) <i>New York Times</i> , “Why Are More American Teenagers Than Ever Suffering from Severe Anxiety?” <i>Smithsonian Magazine</i> , “Are Millennials Too Strung Out on Antidepressants to Even Know Who They Are?”
T Oct 30	Cudahy 108	Mark Fisher, “Good for Nothing” Jia Tolentino, “Where Millennials Come From” Malcolm Harris, “The Working Classroom”
T Nov 6	Cudahy 108	THINKPIECE ON MILLENNIALS DUE FINAL PROJECT PREP DAY ONE

T Nov 13	Straz 356	Mechanisms involved in psychotherapy and pharmacology
T Nov 20	Straz 356	Clinical trials, data analysis, and the replication crisis in the sciences
T Nov 27	Straz 356	Final project prep day
FINAL THOUGHTS		
T Dec 4	TBA	LAST DAY OF CLASS FINAL PROJECT PRESENTATIONS
F Dec 14	n/a	Reflection: "Math Memoir" Revisited DUE BY D2L DROPBOX

Profs. Abbott and Canavan

First Day Assignment: Math Memoir
due: Monday, September 3, via D2L Dropbox

Read Anya Kamenetz's NPR article "Scared Of Math? Here's One Way To Fight The Fear."

Then, in approximately one-to-two double-spaced pages, compose your own "math memoir." Is math a subject you always excelled at? Is it a topic you always struggled in? Did something change, somewhere along the way, for better or for worse? How would you describe your personal relationship with math from childhood, through high school, to your first semester at college?

We will discuss these math memoirs in general terms, as a group, at our next class meeting—but no one will actually read your personal math memoir but the instructors of the course.

At the end of the semester, you will revisit this assignment and describe how taking this course has impacted your understanding of your personal history with math; this reflective essay will stand in for a traditional final exam in the course. Details and expectations for the reflective essay will be distributed in class later in the semester.