Critical Thinking and Methods of Inquiry

Table of Contents

Location and Contact Information

Dr. Javier Hidalgo
Office: 129 Jepson Hall
Email: jhidalgo@richmond.edu or hidalgoj@gmail.com
Class Time: Tuesday & Thursday
- Section 03: 12:00 to 1:15 pm
- Section 05: 1:30pm to 2:45 pm

Classroom: Jepson 120
Office Hours: [I post a sign-up sheet for my office hours online](). Please sign up for office hours there.

Course Description

Critical thinking is reasonable and reflective thinking focused on deciding what to do or believe. A good critical thinker has the ability to rigorously understand and evaluate arguments and evidence, and to use these things to come to a reasoned judgment. The fundamental aim of this class is to enhance your ability to become a good critical thinker. To achieve this goal, we'll focus on honing your ability to understand, evaluate, and create arguments.

What Are the Learning Objectives for This Class?

More specifically, this course is designed to promote the following learning goals:

Improve Your Ability to Analyze and Evaluate Arguments
- *How will we achieve this goal?* Throughout this course, we will practice identifying the components of arguments by diagramming them. We will then evaluate the premises and inferences of these arguments to see whether they are successful at establishing their conclusion.
- *What will you be able to do by the end of the course?* You will be able to diagram a complex, paragraph-length argument and determine whether this argument is good or not.

Improve Your Ability to Construct and Communicate Arguments
- *How will we achieve this goal?* We will learn the features of good arguments throughout the course. In the final part of the course, you will construct and communicate your own argument.
- *What will you be able to do by the end of the course?* You will be able to write a short essay that clearly communicates a strong argument and responds to objections.

Improve Your Understanding of Critical Thinking Concepts
- *How will we achieve this goal?* We will learn and apply important critical thinking concepts such as inference, premise, logical structure, implicit assumptions, independent and dependent arguments, validity, and rules of logical inference.

- *What will you be able to do by the end of the course?* You will be able to explain the above critical thinking concepts and how they are relevant to analyzing and evaluating reasoning.

Why Are These Learning Goals Important?

The goal of this class is to improve your reasoning abilities. And good reasoning is likely crucial to your academic and professional goals. Good reasoning is important to leadership too. We want leaders who can competently analyze and evaluate arguments, and construct arguments that can rationally persuade others. We also want to be able to analyze and evaluate the arguments that leaders give us in order to figure out whether we should support them.

For what it's worth, several Jepson alumni have told me that the skills that they learned in this class have been useful later in their lives. Here are a few representative quotes:

- "I'm working at a law firm this summer and I have to tell you that argument mapping is quickly becoming the most important thing I learned in college. It helped me get to present to a client directly as just a summer intern! So thank you for drilling it into us."

- "My third week on the job, my supervisor asked me to write a white paper summarizing a master's thesis on a topic I knew nothing about. I drew on the argument mapping I learned in Dr. Javier Hidalgo's Critical Thinking class. Using the objectives my boss had outlined for the white paper, I constructed a central argument and then retrofitted the thesis material to that argument."

Former students have also reported that the skills that this class imparts are useful in other classes that focus on analyzing arguments and argumentative writing, such as Leadership Ethics. But I don't consider the skills that you will learn in this class to be only instrumental to some other goal. The skills that you'll learn in this class will help you to think more clearly, if you choose to use them. It's good for us to think clearly, irrespective of whether this helps us to achieve other goals. At least, that's one guy's opinion.

What Are Some Distinctive Features of This Class?

This course includes the following learning strategies.

Argument Mapping. This class will make extensive use of "argument mapping." Argument mapping is a technique for visually representing and analyzing arguments. You'll often map out arguments in this class before evaluating them. The available evidence suggests that argument mapping is an effective way to enhance critical thinking skills. Argument mapping improves reading comprehension, encourages you to better understand the structure of arguments, and makes it easier to evaluate arguments in a systematic and precise way.

Mastery Learning. Perhaps the most distinctive element of this class is mastery learning. Mastery learning is a method of instruction in which students work at their own pace and must achieve a level of mastery before moving forward in the course. You'll need to complete several different steps in this course, and you have to master each step one-by-one. Once you think you're ready for the next step, you'll need to complete mastery checks. If you have achieved mastery, then you'll move onto the next stage. If you have yet to achieve mastery, there is no penalty. You'll just need to practice some more and then you can take a mastery check again.

Why use mastery learning? Learning how to analyze and evaluate arguments is a skill. Now, think about how you've mastered skills in the past. Maybe you've mastered a musical instrument, a sport, or even a video game. How did you do it? You likely didn't do this solely by listening to lectures about the topic or reading books about it. Instead, you probably practiced alot and received feedback about the areas where you could improve. And you kept working until you mastered this skill.

This is the same idea that motivates mastery learning. Class time will be devoted to practicing your skills at argument analysis and evaluation until you have mastered them.

What Are the Steps in This Class?

Step 1: Premise/Ultimate Conclusion Arguments
- You'll learn the basics of argument analysis and evaluation in this step. We'll cover the concepts of inference, indicator words, premises, conclusions, and you'll learn basic argument mapping.

Step 2: Sub-Conclusions
- In this step, you'll learn how to identify, map, and evaluate sub-conclusions, intermediate conclusions in an argument.

Step 3: Dependent Reasons
- You'll learn how to map and identify dependent reasons, reasons that are linked with other premises in an argument. We'll continue to learn other components of argument analysis and evaluation, such as logical rules of inference.

Step 4: Independent Reasons
- This step will teach you how to identify independent reasons (reasons that don't depend on other claims), arguments with no inference indicators, the logic of conditional "if, then" statements, and more.

Step 5: Computer-Assisted Argument Mapping
- You'll learn how to map arguments with a computer program, Mindmup. This will be useful for mapping more complex arguments, for constructing arguments, and for reviewing what you've learned. In addition, you'll complete a project that requires you to analyze and evaluate real-world arguments.

Step 6: Argument Construction
- In this step, you'll hone your skills at constructing your own argument. Your mastery checks for this step will consist in a paper that develops and defends an extended argument, and a map of the central argument of your paper. You'll also learn about good evidence and how to find it.

What are Mastery Checks and How Do They Work?

You make progress in this class by passing "mastery checks." Mastery checks are tests that cover the material for each unit of the class. You'll submit most of the mastery checks during class or office hours. Expect mastery checks to take anywhere from about 10 minutes to a full session of class. There are about two to four mastery checks that you need to complete for each step in the class.

To pass a mastery check, you must demonstrate that you fully understand the material and can complete the mastery check with a minimal number of errors. *This means that you need to receive about 90 percent or higher on a mastery check to pass.*

Once you've completed a mastery check, I'll evaluate your work as promptly as I can and let you know whether you've passed the check. If you haven't passed yet, I'll go over your mastery check with you in class or office hours and explain what you can do to improve next time. You'll then take another version of the mastery check. The process repeats itself until you've passed.

See below for a complete list of mastery checks.

How Does Grading Work in This Class?

As this course incorporates mastery learning, the grading system will be a bit unusual. Here's how it works. Once you complete certain mastery checks, you automatically receive a number of points in the class. Here are the details:

Points	What You Need to Have Done By the End of the Course
95	You passed all of step 6. In other words, you have passed all keys and mastery checks for this step, which requires that you have submitted an "A" quality paper.
90	You've passed most of step 6 - in particular, you've passed all keys for step 6 and mastery checks 6.1-6.3, and submitted at least an "A-" quality paper.
87	You've passed most of step 6 - in particular, you've passed all keys for step 6 and mastery checks 6.1-6.3, and you've submitted at least a "B+" quality paper.
85	You've passed most of step 6 - in particular, you've passed all keys for step 6 and mastery checks 6.1-6.3, and you've submitted at least a "B" quality paper.
80	You've passed most of step 6 - in particular, you've passed all keys for step 6 and mastery checks 6.1-6.3, and you've submitted at least a "B-" quality paper.
77	You've passed most of step 6 - in particular, you've passed all keys for step 6 and mastery checks 6.1-6.3, but you've submitted at least a "C" quality paper.

75	You've passed most of step 6 - in particular, you've passed all keys for step 6 and mastery checks 6.1-6.3, but you've yet to submit at least a "C" quality paper.
70	You've passed all keys and mastery checks for step 5.
60	You've passed all keys and mastery checks for step 4.

So, for example, if you complete steps 1-5, you'll receive 70 points in the class. If you complete steps 1-6 and turn in a "B" paper, then your point total will be 85. And so on.

In addition, there's a pre-test and post-test for the course. You'll take the pre-test on the first day of class and the post-test near the end of the semester. The purpose of these tests is to help me to know whether this class is effective and for you to measure how much you've learned. You can receive up to 5 points by taking pre-test and post-test, which can give you a boost on your base grade. How much of this boost you receive will depend on how well you do. But I'll only count your best performance on the two tests that you take. For example, suppose that you do badly on your pre-test, but you do well on your post-test. I'll only count your post-test, and I'll drop the pre-test. To receive credit, you must complete both the pre-test and the post-test.

At the end of the class, I'll assign you an overall grade based on your point total using the following grading scale:

Total Number of Points	Grade
99	A+
94-98	A
90-93	A-
87-89	B+
84-86	B
80-83	B-
77-79	C+

74-76	C
70-73	C-
67-69	D+
64-66	D
60-63	D-
>60	F

Here are some examples to illustrate how all of this works.

Example 1. Suppose that, by the end of the semester, you've completed all of the mastery checks and turned in a "B" paper. This brings your point total in the class to 85 points. But assume that you receive 2 out of 5 points on the pre-test and 3 out of 5 points on the post-test. Only your highest score counts toward your final grade. So, I'll add 3 points to your base grade (85). Your final point total is 88 points, which is a "B+" in the class.

Example 2. Suppose you completed all mastery checks and submitted an "A-" paper by the end of the semester, and that brings you to 90 points. But you receive 3 out of 5 on the pre-test and 4 out of 5 points on the post-test. I'll take your best score (4 points) and add that to your base grade (90 points). Your final point total is 94, which gives you an "A" in the class.

For additional grading guidelines, please see this document.

What Should I Do in Order to Take a Mastery Check?

Before you take a mastery check, you need to complete the keys for this check. The keys are reading assignments and quizzes that aim to prepare you for a mastery check.

There are two types of keys: reading keys and quiz keys.

- Reading keys ask you to read some of the textbook on a computer program called Perusall. Persuall is a collaborative annotation tool that helps students to do the readings in a more effective and thorough way. This program will encourage us to do the reading together as a class and will allow me to answer

your questions as you read. To pass a reading key, you will need to complete the reading and write annotations on it.

- Quiz keys are short quizzes that help you to test your understanding of the material and that are similar to the mastery checks. You can take the quiz keys at any time and you can also take them as many times as you want.

To complete the keys for a mastery check, you need to receive at least 90 percent on each of them. Once you do that, you can then take the mastery check. You can find all of the keys on blackboard in the folders for the steps.

The keys will help you to prepare for mastery checks. In fact, the keys are <u>part</u> of the steps. This means that you haven't earned full credit for a step unless you pass both the keys and mastery checks for this step. I recommend that you periodically check to see if you've completed all of the keys for the mastery checks that you've attempted.

Please see [the additional grading guidelines](#) for more on how I evaluate keys that you skipped or accidently neglected to complete.

Is Class Attendance Required?

Attendance is not required. You can also come to class and leave whenever you want. Once again, you get to decide how you'll learn. But keep in mind that almost all of the mastery checks must be submitted during class sessions or office hours.

Moreover, you can only take mastery checks during office hours under certain circumstances. In particular, *you can only take mastery checks during office hours if you are also attending class regularly and you are not on the "fast" or "A" track on the [pacing guide](#)*. (The pacing guide is a guide that tells you what you should accomplish each week depending on your goals for the class - people on the fast track or A tracks are on schedule to earn an "A" grade in the class).

The option of taking mastery checks during office hours is a safety-net to prevent you from falling behind your desired pace in the class. If you're caught up with the "A" or "fast" tracks, you can only take mastery checks during class.

How Can I Meet with the Instructor?

I'm happy to help you during office hours and you can sign up for office hours on my schedule at this link.

Where Can I Find the Course Materials?

All of the readings and exercises are available on the blackboard page for this class.

What are the Important Dates and Deadlines for this Class?

There are several important deadlines and dates.

Important Date	Assignment
Tuesday, January 16th	Pre-Test
Tuesday, April 16th	Post-Test
Thursday, April 25th by the end of class	Deadline to turn in mastery check 6.3 and all prior mastery checks
Friday, April 26th at midnight	This is the deadline to submit 6.4 if you want feedback on your paper and a chance to revise your paper in light of my feedback. If you submit your paper after this date, you won't have a chance to revise your work.
Saturday, May 4th at Midnight	This is the final deadline to submit 6.4.

I'm Worried about Falling Behind in this Class or I'm Struggling with the Material. What Should I Do?

I've created a pacing guide that helps you to understand what you should be doing on any given week, depending on your goals for this class. I will pass out copies of the pacing guide on the first day of class.

In addition, I will send out weekly emails to the class that remind you of what you should accomplish each week in order to achieve your goals. I've found that these weekly emails are often helpful in keeping students on track.

Furthermore, you can take mastery checks in my office hours if you fall behind the "fast" or "A" tracks. This is a safety-net that allows you to recover if something has prevented you from reaching your goals.

If you're struggling on a mastery check, you should take the following steps:

- Do all of the exercises on blackboard and compare your answers to the solutions that are provided.

- Watch the videos on blackboard.

- Do practice mastery checks and check your answers.

- Redo the keys.

- Schedule a meeting with the instructor to go over any areas of difficulty.

If you attempt a mastery check four times during a class session and are still struggling to pass, you should ask me for permission before you try another one. You might need a bit more preparation and practice before you're ready to pass the check.

Complete List of Mastery Checks

There are 22 mastery checks in total. Here they are:

Step	Mastery Check	What You Need to Know or Do
		Pre-Test
1	1.1	Use and identify indicator words
	1.2	Basic argument identification, analysis, and evaluation

2	2.1	Argument identification; when to place claims on a map
	2.2	Map arguments with subconclusions
	2.3	Evaluate arguments with subconclusions
3	3.1	When to divide claims; argument Identification
	3.2	Map arguments with dependent reasons
	3.3	Identify missing premises
	3.4	Evaluate arguments with dependent reasons
4	4.1	Map arguments with independent reasons
	4.2	Identify valid and invalid inferences
	4.3	Map complex arguments with independent reasons
	4.4	Evaluate arguments with independent reasons
5	5.1	Learn how to use an argument mapping computer program
	5.2	Use a computer program to map arguments
	5.3	Have a conversation with a person who disagrees with you
	5.4	Summarize and map your partner's argument
	5.5	Evaluate your partner's argument
6	6.1	Come up With a topic for your paper
	6.2	Develop a main argument for your paper and map this Argument
	6.3	Identify and find good evidence
	6.4	Write a paper that satisfies the rubric
Post-Test		