UNC | COLLEGE OF ARTS AND SCIENCES
Philosophy

How to Reason and Argue:
An Introduction to Critical Thinking

PHIL 105.001 / Spring 2024
The University of North Carolina at Chapel Hill

Source: SCIENCE MAGAZINE

Course Information

Credit Hours: 3

Target Audience: Undergraduates

Meeting Pattern: MWF 10:10–11:00 A.M.

Instructional Format: In-person

Classroom or Location: Stone Center (SC) 209

Instructor Information

Name: Meredith Sheeks (she/they)

Email: msheeks@unc.edu

Office Location: Caldwell 210D

Office Hours: Wednesdays 11:05 A.M.-12:05 P.M., Thursdays 11:50 A.M.-12:50 P.M., and by appointment (in-person)

COURSE CONTENT

Course Description

A course on how to identify, analyze, evaluate, and construct arguments. More specifically, this course covers elementary methods for evaluating arguments using deductive and inductive standards. Topics discussed include propositional logic, categorical logic, statistical generalizations, arguments from analogy, inferences to the best explanation, probabilistic reasoning, causal reasoning, expected value, and decisions under uncertainty.

Course Texts & Materials

There is one required textbook for this class,

Understanding Arguments: An Introduction of Informal Logic, Ninth Edition
by Walter Sinnott-Armstrong and Robert Fogelin (Cengage), 2015.

The book is available for rent or purchase at UNC bookstores and online: Here, here, and here.
(Estimated cost: ~$50. Purchase or rent the full, as opposed to the concise version of the text.)

Students will also need ready access to the course's Canvas site.
Additional required texts will be made freely available on Canvas.

Class Expectations

Successful students should plan to attend class, to actively participate in class,
and to spend 6 to 9 hours each week working on course assignments outside of class.

Students are strongly discouraged from using laptops or other electronic devices during class.
Students who use these devices (for any non-medical reason) will be asked to sit in the back of the classroom.

Course Goals & Student Learning Outcomes (SLOs)

All UNC philosophy courses aim at the acquisition and nurturing of basic philosophic skills.
One of the main goals of our philosophy curriculum is to instill and enable the development of skills that are distinct to philosophy, but which are foundational to all forms of knowledge.

These **basic philosophical skills** involve being able to:

- Think critically;
- Deploy philosophical concepts and terminology correctly, in either a historical or contemporary setting;
- Represent clearly and accurately the views or argument of particular philosophers, in either a historical or contemporary setting;
- Identify the premises and conclusion(s) of a philosophical argument and assess both its validity and soundness;
- Apply a philosophical theory or argument to a new topic, and draw and defend reasonable conclusions about that topic;
- Develop an argument for a particular solution to a philosophical problem in either a historical or contemporary setting;
- Write clearly, precisely, and persuasively in defense of a philosophical thesis;
- Participate in respectful, critical, and reflexive dialogues about difficult philosophical positions; and
- Read, interpret, and evaluate the strengths and weaknesses of different philosophical texts and the philosophical positions presented in them.

Source: BRITANNICA

As part of the IDEAs in Action General Education Curriculum, this course satisfies the following Focus Capacities:

Focus Capacity #1—Ways of Knowing

Description: Why do I believe what I believe? Why do so many people disagree? Courses in the Ways of Knowing Focus Capacity challenge students to critically examine their own beliefs, alongside the beliefs of others. They offer students the opportunity to explore a concept from a variety of perspectives, to encounter alternative ways of thinking about the world.

Student Learning Outcomes:

These are the learning outcomes that are expected of students after completing a course.

1. Recognize and use one or more approach/es to developing and validating knowledge of the unfamiliar world.
2. Evaluate ways that temporal, spatial, scientific, and philosophical categories structure knowledge.
3. Interrogate assumptions that underlie our own perceptions of the world.
4. Employ strategies to mitigate or adjust for preconceptions and biases.
5. Apply critical insights to understand patterns of experience and belief.

Questions for Students:

These are the types of questions you should be able to answer after completing a course.

1. What norms and expectations do I take for granted?
2. What categories and concepts frame my assumptions, experiences, and beliefs?
3. What practices of investigation or inquiry best challenge those assumptions and expectations?
4. How can I consider whether my beliefs might be wrong?

Focus Capacity #2—Quantitative Reasoning

Description: Numbers and data are used in all areas of life, and learning how to analyze and interpret numbers is more than just a classroom exercise. Courses in the Quantitative Reasoning Focus Capacity challenge students to learn how to understand and apply mathematical concepts in real-world situations and to develop methods for using data, logic, and math beyond the scope of the classroom.

Student Learning Outcomes:

These are the learning outcomes that are expected of students after completing a course.

1. Summarize, interpret, and present quantitative data in mathematical forms, such as graphs, diagrams, tables, or mathematical text.
2. Develop or compute representations of data using mathematical forms or equations as models, and use statistical methods to assess their validity.
3. Make an evaluate important assumptions in the estimation, modeling, and analysis of data, and recognize the limitations of the results.
4. Apply mathematical concepts, data, procedures, and solutions to make judgments and draw conclusions.
5. Synthesize and present quantitative data to others to explain findings or to provide quantitative evidence in support of a position.

Questions for Students:

These are the types of questions you should be able to answer after completing a course.

1. What is the role of mathematics in organizing and interpreting measurements of the world?
2. How can mathematical models and quantitative analysis be used to summarize or synthesize data into knowledge and predictions?
3. What methodology can we apply to validate or reject mathematical models or to express our degree of confidence in them?

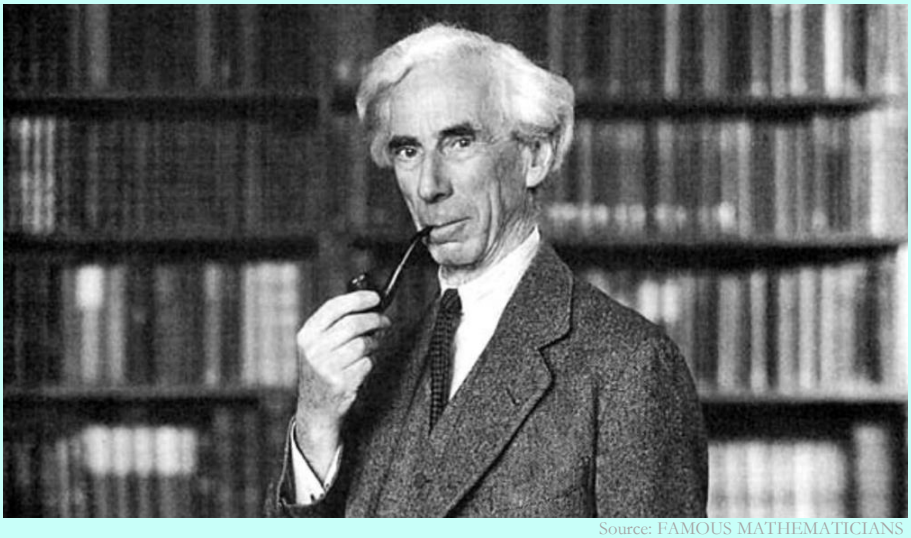
Recurring Capacities

Every focus capacity course includes the following activities: ·

- Writing, totaling at least 10 pages in length or the intellectual equivalent;
- Presenting material to the class, smaller groups, or the public through oral presentations, webpages, or other means; and
- Collaborating in pairs or groups to learn, design, solve, create, build, or research.

These activities are designed to help students practice crucial skills for future study, life, and career success.

COURSE ASSIGNMENTS & ASSESSMENTS



Source: FAMOUS MATHEMATICIANS

Assignment Descriptions

Problem Sets (28%)

Students will have the opportunity to practice and apply the material we cover in-class by working through eight problem sets throughout the semester.

The primary purpose of the problem sets is to motivate participants in the class to not only read and hear about critical reasoning, but also to practice it. These problem sets will also serve to prepare students for their examinations and writing assignments.

Completion and submission of all eight problem sets is a requirement for the course. Provided a student makes a good faith effort on all eight problem sets, their lowest submission will be dropped. While each student must submit their own work, students are strongly encouraged to collaborate on the problem sets.

Together, the eight problem sets count for 28% of the final grade.

Group Presentation (12%)

During the few weeks of class, students will be placed into groups of three to four students. Each group will be assigned a future presentation date and asked to prepare a 12-to-15-minute presentation on one of five categories of informal fallacies: (1) fallacies of vagueness; (2) fallacies of ambiguity; (3) begging the question; (4) self-sealers; and (5) fallacies of relevance.

The goals for each group will be

(i) to find a pre-existing (and perhaps surprising) example of their fallacy out in the "real world;"

(ii) to construct their own example of the fallacy; and

(iii) to effectively present their finding from (i), and their example from (ii), to the class.

Excellent presentations will show, in an engaging way, that students understand how their fallacy works, as well as why it's a form of bad reasoning.

Since collaboration on this assignment is crucial, students will be required to anonymously assess their team's individual and collective efforts on the assignment immediately following their presentation day.

The purpose of the group presentation assignment is to press students to collaborate on how the course material relates to everyday walk and talk.

The group presentation contributes to 12% of the final grade.

Exams (45%)

There will be two exams in the course, a midterm and a cumulative final.

The purpose of each exam is to test students on the basic skills of critical reasoning.

Scheduled for Friday, **March 8th** at 10:10 A.M. the first exam counts for 22% of the final grade.

Scheduled for Tuesday, **May 7th** at 8:00 A.M. the second and final exam counts for 23% of the final grade.

Papers & Puzzles (15%)

Students will be tasked with completing a short paper assignment for each unit in the course.

The purpose of the assignment is to challenge students to creatively apply *in writing* the critical reasoning skills that they've encountered up to that point in the course.

The first Paper & Puzzle will ask students to reconstruct and evaluate a rather spicy argument on locomotion.

It will be due at the end of the day (11:55 P.M.) on Monday, **February 19th**.

The second Paper & Puzzle will ask students to solve a murder mystery using the tools of deductive logic.

After solving the mystery, students will be tasked with writing a fictional letter to the local authorities wherein they carefully walk their intended reader through *how* they cracked the case.

It will be due at the end of the day (11:55 P.M.) on Friday, **March 29th**.

The third Paper & Puzzle will ask students to assess the merits of various cases of statistical generalization.

It will be due before class (at 5:00 A.M.) on Friday, **April 26th**.

(Each paper should be at least 3 and a half pages—double-spaced, 12pt., Times New Roman—in length. Collectively, this will amount to over 10 pages of writing throughout the semester.)

The instructor will release detailed instructions about each assignment at least 10 days before each assignment is due. The three short papers contribute to 15% of the final grade.

Grading Scale & Schema

Late Work

In general, late work will not be accepted. The professor will regularly remind students of upcoming assignments throughout the course. Students will be expected to work ahead on assignments and to plan accordingly, in light of other coursework, extracurricular activities, and additional commitments.

Exceptions may be made in cases of emergency at the discretion of the instructor.

Grading Scale

Numeric Grade (%)	Letter Grade
93.5 and above	A
89.5 – 93.4	A-
86.5 – 89.4	B+
82.5 – 86.4	B
79.5 – 82.4	B-
76.5 – 79.4	C+
72.5 – 76.4	C
69.5 – 72.4	C-
66.5 – 69.4	D+
59.5 – 66.4	D
59.4 and below	F

COURSE SCHEDULE

Unit 1: The Basics of Argumentation

Date	Topic(s)/Guiding Questions	Readings or Assignments Due
Wednesday, January 10th	What is critical thinking?	
Friday, January 12th	Why argue? What's arguing got to do with it?	Read: o Sinnott-Armstrong, *Think Again*, pp.1-8, 48-63 o Vaughn, *The Power of Critical Thinking*, pp.3-9 (Both readings will be available on Canvas.)
Monday, January 15th	No Class Meeting	
*Wednesday, January 17th	What is an argument? What is it not?	Read: o Sinnott-Armstrong, *Think Again*, pp.77-87 (The reading will be available on Canvas.) Watch: o The Monty Python Skit, "Argument Clinic"
Friday, January 19th	The Language of Argument	Read: o *Understanding Arguments*, pp.41-56 (The reading will be available on Canvas.)
Monday, January 22nd	Free the Frogs, Dissect an Argument	Read: o *Understanding Arguments*, pp.79-89 **Problem Set 1 Due** (before class)
Wednesday, January 24th	Validity and Soundness	Read: o *Understanding Arguments*, pp.90-4
Friday, January 26th	Enthymemes	Read: o *Understanding Arguments*, pp.96-108
Monday, January 29th	The Uses of Argument: Justification versus Explanation	Read: o *Understanding Arguments*, pp.1-13
Wednesday, January 31st	The Uses of Argument: Refutation, Part I	Read: o *Understanding Arguments*, pp.333-9
Friday, February 2nd	The Uses of Argument: Refutation, Part II	Read: o *Understanding Arguments*, pp.341-6
Monday, February 5th	Inductive versus Deductive Arguments	Read: o *Understanding Arguments*, pp.179-82 o Vaughn, *The Power of Critical Thinking*, pp.63-70 (The second reading will be available on Canvas.) **Problem Set 2 Due** (before class)
Wednesday, February 7th	Introduction to Informal Fallacies	Skim: o *Understanding Arguments*, pp.275-321 Browse: o The Fallacy Files
Friday, February 9th	Application & Review Day	Read: o Justin P. McBrayer, "Why Our Children Don't Think There are Moral Facts" o Agnes Callard, "The Case Against Travel" (Both readings will be available on Canvas.)

Unit 2: Deductive Arguments

Date	Topic(s)/Guiding Questions	Readings or Assignments Due
Monday, February 12th	No Class Meeting	
Wednesday, February 14th	Dipping our Toes into Propositional Logic: Truth Tables, Conjunctions, & Disjunctions	Read: o Understanding Arguments, pp.111-22 o [optional] Selections from Wittgenstein's *Tractatus* (The second reading will be available on Canvas.)
Friday, February 16th	Stepping into Propositional Logic: Negations & Testing for Validity	Read: o *Understanding Arguments*, pp.122-34
Monday, February 19th	Swimming in Propositional Logic: Conditionals & Formal Fallacies	Read: o *Understanding Arguments*, pp.134-40 **Problem Set 3 Due** (before class) **Paper & Puzzle 1 Due** (by 11:55 P.M.)
Wednesday, February 21st	Splashing in Propositional Logic: Arguments in Formal Translation	Read: o *Understanding Arguments*, pp.142-8
Friday, February 23rd	**Presentation Day 1** (Fallacies of Vagueness)	
Monday, February 26th	Stepping into Categorical Logic: The Basic Categorical Forms	Read: o *Understanding Arguments*, pp.151-8 **Problem Set 4 Due** (before class)
Wednesday, February 28th	Swimming in Categorical Logic: Contradictories & Validities	Read: o *Understanding Arguments*, pp.159-66
Friday, March 1st	**Presentation Day 2** (Fallacies of Ambiguity)	
Monday, March 4th	Splashing in Categorical Logic: The Theory of the Syllogism	Read: o *Understanding Arguments*, pp.166-74 o [optional] Selections from Aristotle's *Prior Analytics* (The second reading will be available on Canvas.) **Problem Set 5 Due** (before class)
Wednesday, March 6th	Application & Review Day	
Friday, March 8th	**Exam 1/Midterm**	
Monday, March 11th	No Class Meeting	◦
Wednesday, March 13th	No Class Meeting	
Friday, March 15th	No Class Meeting	

Unit 3: Inductive Arguments

Date	Topic(s)/Guiding Questions	Readings or Assignments Due
Monday, March 18th	Statistical Generalizations	Read: o *Understanding Arguments*, pp.183-8
Wednesday, March 20th	Statistical Applications	Read: o *Understanding Arguments*, pp.189-91 Watch: o This Short Clip from *Young Sherlock Holmes* (1985)
Friday, March 22nd	**Presentation Day 3** (Begging the Question)	
Monday, March 25th	Inferences to the Best Explanation	Read: o *Understanding Arguments*, pp.195-201
Wednesday, March 27th	Arguments from Analogy	Read: o *Understanding Arguments*, pp.204-8
Friday, March 29th	No Class Meeting	**Paper & Puzzle 2 Due** (by 11:55 P.M.)
Monday, April 1st	Basic Skills in Probability	Read: o *Understanding Arguments*, p.239, pp.243-251 **Problem Set 6 Due** (before class) (no joke)
Wednesday, April 3rd	Fallacies of Probability	Read: o *Understanding Arguments*, pp.239-241 o Weisberg, The Gambler's Fallacy
Friday, April 5th	**Presentation Day 4** (Self-sealers)	
Monday, April 8th	Bayes' Theorem	Read: o *Understanding Arguments*, pp.253-9 o Weisberg, Bayes' Theorem
Wednesday, April 10th	The Base Rate Fallacy	Watch: o Galef, A visual guide to Bayesian thinking
Friday, April 12th	Application & Review Day	**Problem Set 7 Due** (by 11:55 P.M.)
Monday, April 15th	Reasoning about Causes: Necessary & Sufficient Conditions	Read: o *Understanding Arguments*, pp.215-8
Wednesday, April 17th	Testing for Conditions, Searching for Causes	Read: o *Understanding Arguments*, pp. 220-30 o [optional] Skyrms, *Choice and Chance*, chapter 5 (The second reading will be available on Canvas.)
Friday, April 19th	**Presentation Day 5** (Fallacies of Relevance)	
Monday, April 22nd	Expected Value	Read: o *Understanding Arguments*, pp. 263-7 o Weisberg, Expected Value
Wednesday, April 24th	Decisions Under Uncertainty, with a side of rules	Read: o *Understanding Arguments*, pp. 268-71
Friday, April 26th	Application Day	**Paper & Puzzle 3** (due before class)
Monday, April 29th	Review Day	**Problem Set 8** (due by 11:55 P.M.)
Tuesday, May 7th (at 8:00 A.M.)	**Cumulative Final Exam/Exam 2**	

Academic Policies

University Class Attendance Policy

University Policy: As stated in the University's Class Attendance Policy, no right or privilege exists that permits a student to be absent from any class meetings, except for these University Approved Absences:

1. Authorized University activities: University Approved Absence Office (UAAO) website provides information and FAQs for students and FAQs for faculty related to University Approved Absences
2. Disability/religious observance/pregnancy, as required by law and approved by Accessibility Resources and Service and/or the Equal Opportunity and Compliance Office (EOC)
3. Significant health condition and/or personal/family emergency as approved by the Office of the Dean of Students, Gender Violence Service Coordinators, and/or the Equal Opportunity and Compliance Office (EOC).

Guidelines for Use of Generative Artificial Intelligence Tools

In this course, the use of generative AI is not permitted on any assignment (whether graded or not).
Any use of generative AI tools in this course constitutes a violation of the Honor Code.

Honor Code Statement

All students are expected to follow the guidelines of the UNC Honor Code. In particular, students are expected to refrain from "lying, cheating, or stealing" in the academic context. If you are unsure about which actions violate the Honor Code, please see the course instructor, or consult studentconduct.unc.edu.

Syllabus Changes

The instructor reserves the right to make changes to the syllabus including project due dates and test dates.
These changes will be announced as early as possible.

Acceptable Use Policy

By attending the University of North Carolina at Chapel Hill, you agree to abide by the University of North Carolina at Chapel Hill policies related to the acceptable use of IT systems and services. The Acceptable Use Policy (AUP) sets the expectation that you will use the University's technology resources responsibly, consistent with the University's mission. In the context of a class, it's quite likely you will participate in online activities that could include personal information about you or your peers, and the AUP addresses your obligations to protect the privacy of class participants. In addition, the AUP addresses matters of others' intellectual property, including copyright. These are only a couple of typical examples, so you should consult the full Information Technology Acceptable Use Policy, which covers topics related to using digital resources, such as privacy, confidentiality, and intellectual property. Additionally, consult the Safe Computing at UNC website for information about data security policies, updates, and tips on keeping your identity, information, and devices safe.

Grade Appeal Process

If you have any concerns with grading or feel you have been awarded an incorrect grade, please discuss it with me as soon as possible. If we cannot resolve the issue, you may talk to our director of undergraduate studies or department chair.

Services & Student Support Policies

Accessibility Resources & Services (ARS)

Accessibility Resources and Service (ARS – ars@unc.edu) receives requests for accommodations, and through the Student and Applicant Accommodations Policy determines eligibility and identifies reasonable accommodations for students with disabilities and/or chronic medical conditions to mitigate or remove the barriers experienced in accessing University courses, programs and activities. ARS also offers its Testing Center resources to students and instructors to facilitate the implementation of testing accommodations.

Counseling & Psychological Services (CAPS)

UNC-Chapel Hill is strongly committed to addressing the mental health needs of a diverse student body. The Heels Care Network website is a place to access the many mental health resources at Carolina. CAPS is the primary mental health provider for students, offering timely access to consultation and connection to clinically appropriate services. Go to their website https://caps.unc.edu/ or visit their facilities on the third floor of the Campus Health building for an initial evaluation to learn more. Students can also call CAPS 24/7 at 919-966-3658 for immediate assistance.

Title IX Resources

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Reports can be made online to the EOC at https://eoc.unc.edu/report-an-incident/ or by contacting the University's Title IX Coordinator (Elizabeth Hall, titleixcoordinator@unc.edu) or the Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu). Confidential resources include Counseling and Psychological Services and the Gender Violence Services Coordinators (gvsc@unc.edu). Additional resources are available at safe.unc.edu.

Policy on Non-Discrimination

The University is committed to providing an inclusive and welcoming environment for all members of our community and to ensuring that educational and employment decisions are based on individuals' abilities and qualifications. Consistent with this principle and applicable laws, the University's Policy Statement on Non-Discrimination offers access to its educational programs and activities as well as employment terms and conditions without respect to race, color, gender, national origin, age, religion, genetic information, disability, veteran's status, sexual orientation, gender identity or gender expression. Such a policy ensures that only relevant factors are considered, and that equitable and consistent standards of conduct and performance are applied. If you are experiencing harassment or discrimination, you can seek assistance and file a report through the Report and Response Coordinators (email reportandresponse@unc.edu or see additional contact info at safe.unc.edu) or the Equal Opportunity and Compliance Office at https://eoc.unc.edu/report-an-incident/.

Diversity Statement

I value the perspectives of individuals from all backgrounds reflecting the diversity of our students. I broadly define diversity to include race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, political background, and physical and learning ability. I strive to make this classroom an inclusive space for all students. Please let me know if there is anything I can do to improve. I appreciate any suggestions.

Undergraduate Testing Center

The College of Arts and Sciences provides a secure, proctored environment in which exams can be taken. The center works with instructors to proctor exams for their undergraduate students who are not registered with ARS and who do not need testing accommodations as provided by ARS. In other words, the Center provides a proctored testing environment for students who are unable to take an exam at the normally scheduled time (with pre-arrangement by your instructor). For more information, visit http://testingcenter.web.unc.edu/.

Learning Center

Want to get the most out of this course or others this semester? Visit UNC's Learning Center at http://learningcenter.unc.edu to make an appointment or register for an event. Their free, popular programs will help you optimize your academic performance. Try academic coaching, peer tutoring, STEM support, ADHD/LD services, workshops and study camps, or review tips and tools available on the website.

Writing Center

For free feedback on any course writing projects, check out UNC's Writing Center. Writing Center coaches can assist with any writing project, including multimedia projects and application essays, at any stage of the writing process. You don't even need a draft to come visit. To schedule a 45-minute appointment, review quick tips, or request written feedback online, visit http://writingcenter.unc.edu.