

# P105: Critical Thinking

---

Indiana University, Bloomington, Fall 2024

Contact	<p>Lead Instructor: Prof Calum McNamara Email: <a href="mailto:calmcnam@iu.edu">calmcnam@iu.edu</a> Office: <a href="#">Sycamore Hall</a>, Room 107 Office Hours: Tuesdays and Thursdays, 12:30–1:30pm</p> <p>Associate Instructor: Oliver Hyde Email: <a href="mailto:mohyde@iu.edu">mohyde@iu.edu</a> Office: <a href="#">Sycamore Hall</a>, Room 119 Office Hours: Mondays and Wednesdays, 3–4pm</p>
Course Meetings	<p>Lectures: <a href="#">Cedar Hall</a>, Room C114 Times: Tuesdays and Thursdays, 3:10–4pm</p> <p>Sections: <a href="#">Ballantine Hall</a>, Room 133 Times: Fridays, at either 12:45–1:35pm or 1:55–2:45pm (check which section you're enrolled in)</p>
Course Description	<p>In this course, we will attempt to equip ourselves with the tools we need to <i>reason well</i>. To do this, we'll draw from several areas: cognitive psychology, behavioral economics, philosophy, logic, probability theory, and decision theory. We will consider empirical evidence about “heuristics and biases”—spontaneous judgments that can be predictably irrational. And we will study what good deductive, causal, and probabilistic reasoning looks like. However, the goals of this course are entirely practical. In particular, we're going to try to develop effective reasoning skills, which have clear applications in your personal and professional lives. The course is open to students from all areas of the University interested in improving their reasoning ability and their ability to construct and recognize compelling arguments. These skills may be helpful in a wide variety of university subjects and extra-academic pursuits.</p>
Materials	<p>All of our readings will come from the wonderful textbook <i>Reason Better</i>, by Prof David Manley. This textbook is available exclusively through the Tophat Online Learning platform. Go to <a href="https://tophat.com/">https://tophat.com/</a> and sign in using your university email. The access code for the course will be supplied in class.</p>
Grading	<p>Tophat Homework: 25% In-class Quizzes: 10% Midterm Exam: 25% Second Midterm Exam: 35% (in class, on the last day) Participation and Attendance: 5%</p>

Tophat Homework	There will be ten problem sets in this course, based on chapters from the <i>Reason Better</i> textbook. These problem sets are administered through the Tophat Platform, and (usually!) contain 10 questions per chapter. These questions will be graded for accuracy. If you miss a homework assignment or are late, your grade will be zero. (The Tophat system does not allow submission of questions after the deadline—you have been warned!) Because homework assignments are easy and worth only 2.5% of your grade (each), we do not drop the lowest Tophat homework assignment.
Exams	There will be two exams in this course: one midterm and a final. (Note that the final exam will be “midterm style”, however, and thus will be administered in class, on the last day!) The first midterm will cover the material between Weeks 1 and 6; and the final exam will be cumulative—it will cover material from all parts of the course. That said, I will weight the final more heavily towards later material.
Honor Code	Although it should go without saying: don’t cheat on your homeworks. I promote and expect honesty and fairness in all academic matters. And so, all cases of academic misconduct will be referred to the Office of the Dean of Students. Anyone found responsible for misconduct will receive a grade of F for the course, in addition to any sanction from the College. For more information, including examples academic misconduct and potential sanctions, please see <a href="#">here</a> .
Technology	<p>With two exceptions, laptops, phones, and other electronic devices are not permitted to be used during lecture. Multiple studies show that students using laptops, etc., do significantly worse on exams that test their comprehension than students who do not use these things. This is true even when students are not multitasking. Typing shifts you into “transcription mode”, whereas writing by hand requires you to actively process material. So, for the purposes of this course: no technology!</p> <p>The first exception is if you’re going to take notes <i>by hand</i> on a device like an iPad or a reMarkable. That’s allowed. The other exception is if you have a disability that necessitates using a computer, or some other electronic device. Obviously, if that’s the case, then I’m happy to accommodate you. But if this is so, please speak to me about it as early as you can.</p>
Communication	<p>If you have a question about course mechanics or housekeeping, please:</p> <ul style="list-style-type: none"> <li>• first, check the syllabus and schedule;</li> <li>• then, if you haven’t found your answer, please email your Assistant in Instruction, Oliver (not Prof McNamara).</li> </ul> <p>If you have a question about course content, please:</p> <ul style="list-style-type: none"> <li>• first, check the schedule;</li> <li>• then, come to office hours.</li> </ul> <p>Please try not to email either Prof McNamara or Oliver with questions about course content—that’s what sections and office hours are for. We can provide more thor-</p>

ough answers in section/office hours. Plus, discussing your questions in the presence of other students is often helpful, both for you and them.

Finally, if you email either Prof McNamara or Oliver on a weekday, then we will endeavor to answer within 24 hours. The exception to this rule is if you email on a Friday: then, we will try to answer by the end of the day the following Monday.

#### Disabilities

The Americans with Disabilities Act is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Students who require academic accommodations can work with AES (Academic Education Services) to arrange for (among other things) assistive technology or academic coaching. Many students don't receive adequate diagnoses, or discover only late in their academic careers that they have access to academic accommodations. Thus, if you even *suspect* that you might need such accommodations, it's worth reaching out early on.

For reasons of privacy and consistency, I ask that you start with AES; in particular, see [here](#) for further details. However, please know that whether or not you are able to arrange formal accommodations, I am committed to working with you to ensure that you are able to participate fully in this course. Just speak to me about your needs, as soon as you can.

#### Mental Health and "Ghosting"

In the past, I've had students who stop coming to class or section, and stop handing in assignments, partway through the term. This is usually because the student is overwhelmed with work, facing a difficult personal situation, or struggling with a mental health issue. If you find yourself confronted with any of these issues (or a similar one), please know that you're not alone: many college students experience such struggles.

In case you find yourself in a situation like this, I strongly encourage you to talk to the university's counseling service as soon as you can: see [here](#) for contact information. They are professionals and they care very much about your well-being. I also encourage you to communicate with me or your Oliver about any missing homeworks, etc. We're not mental health professionals, but we also care about your well-being, and can better help you manage your assignments if we know what's going on as it's happening, instead of being informed of any issues shortly before (or after) the end of term.

#### Schedule

##### **Week 1: Reasoning**

8/26 Reading: None (Introductory Lecture)

8/28 Reading: *Reason Better*, Chapter 1, to the end of Section 1.1

##### **Week 2: Reasoning (Cont'd)**

9/2 Reading: *Reason Better*, Chapter 1, Section 1.2

9/4 Reading: *Reason Better*, Chapter 1, finish the chapter  
**Tophat Homework 1 due at Friday 9/5 by 5pm!!**

### **Week 3: Mindset**

9/9 Reading: *Reason Better*, Chapter 2, up to the end of Section 2.2  
9/11 Reading: *Reason Better*, Chapter 2, finish the chapter  
**Tophat Homework 2 due at Friday 9/12 by 5pm!!**

### **Week 4: Clarity**

9/16 Reading: *Reason Better*, Chapter 3, up to the end of Section 3.2  
9/18 Reading: *Reason Better*, Chapter 3, finish the chapter  
**Tophat Homework 3 due at Friday 9/19 by 5pm!!**

### **Week 5: Entailment**

9/23 Reading: *Reason Better*, Chapter 4, up to the end of Section 4.2  
9/25 Reading: *Reason Better*, Chapter 4, finish the chapter  
**Tophat Homework 4 due at Friday 9/26 by 5pm!!**

### **Week 6: Evidence**

9/30 Reading: *Reason Better*, Chapter 5, up to the end of Section 5.1  
10/2 Reading: *Reason Better*, Chapter 5, finish the chapter  
**Tophat Homework 5 due at Friday 10/3 by 5pm!!**

### **Week 7: Review of Part 1**

10/7 Review Session  
10/9 **First Midterm Exam!!**

### **Fall Break 10/10–10/12**

### **Week 8: Generalization**

10/14 Reading: *Reason Better*, Chapter 6, up to the end of Section 6.2  
10/16 Reading: *Reason Better*, Chapter 6, finish the chapter  
**Tophat Homework 6 due at Friday 10/17 by 5pm!!**

### **Week 9: Causes**

10/21 Reading: *Reason Better*, Chapter 7, up to the end of Section 7.2

10/23 Reading: *Reason Better*, Chapter 7, finish the chapter

**Tophat Homework 7 due at Friday 10/24 by 5pm!!**

### **Week 10: Updating**

10/28 Reading: *Reason Better*, Chapter 8, up to the end of Section 8.1

10/30 Reading: *Reason Better*, Chapter 8, finish the chapter

**Tophat Homework 8 due at Friday 10/31 by 5pm!!**

### **Week 11: Decisions**

11/4 Reading: *Reason Better*, Chapter 9, up to the end of Section 9.1

11/6 Reading: *Reason Better*, Chapter 9, finish the chapter

**Tophat Homework 9 due at Friday 10/31 by 5pm!!**

### **Week 12: Co-thinking**

11/11 Reading: *Reason Better*, Chapter 10, up to the end of Section 10.1

11/13 Reading: *Reason Better*, Chapter 10, finish the chapter

**Tophat Homework 10 due at Friday 10/31 by 5pm!!**

### **Week 13: Co-thinking (Con'd)**

11/18 Reading: *Reason Better*, Chapter 10, re-read, if you like

11/20 Review

### **Thanksgiving Break 11/21–11/30**

### **Week 14: Course Wrap-up**

12/1 Reading: TBD

12/3 Reading: TBD

### **Week 15: Review**

12/1 Review

12/3 **Final Exam (in class)!!**