COLL C104, Fall 2024
Opinions, Beliefs, and Truth: The Challenges of Psychology and Neuroscience – Syllabus

CLASS TIME AND PLACE

Lectures on Monday and Wednesday:

Section #30487, 9:10 AM – 10:00 AM in PY 226

Discussion Sections on Friday:

Section #30488, 9:10 AM – 10:00 AM in PY 226

Section #30489 10:20 AM – 11:10 AM in PY 226

INSTRUCTOR INFORMATION	**DISCUSSION SECTION INSTRUCTOR (AI) INFORMATION**
Instructor: Rick Hullinger Office: PY A300B Office Hours will be held via Zoom: Monday 10:15 AM – 12:15 PM Tuesday 2:00 PM – 4:00 PM Or in-person or online by appointment Office Telephone: 812-856-6854 Email Address: rahullin@iu.edu	Instructor: Hellen Kyler Office Hours: By appointment Email Address: hkyler@iu.edu

COURSE GOALS

This course will address the questions of what we can know and how we can know it. We'll start with general discussions about the scientific enterprise: what the scientific process *really* is vs. what most people believe it to be. We will see how science is built on ignorance and failure, and learn that these things should be celebrated, not shamed. We will also take a critical look at the scientific process and explore the roles of responsibility, ethics, and diversity in science. We will investigate the rich but imperfect history of psychology and other sciences to see how to use observation and experimentation to overcome our ignorance. By surveying scientific techniques and methods, we will wrestle with ideas about what experiments and observations can (and can't) reveal and how and what can be learned from them.

This course will include challenging material. However, the tests and assignments are designed so that any student who is willing to put in the time to digest the course content, work hard outside of class, develop and use good study strategies, and contact me or the TA when they are struggling, can develop a thorough understanding of the material and ultimately succeed in the course.

In this course, successful students will be able to:

- Demonstrate the ways psychologists and neuroscientists seek answers, solve problems, and organize ideas or the merits of viewing a problem from an interdisciplinary or a multidisciplinary perspective
- Seek out information from various sources, evaluate the validity of that information, and construct arguments.
- Think critically about the scientific enterprise and debate which parts of the scientific process are working well and which may need revision.

- Recognize and compare different research designs and techniques and select an appropriate research design to evaluate competing hypotheses
- Generate hypotheses and design a research study to address these hypotheses
- Explain the key components of human and animal research ethics and be able to design an experiment that adheres to ethical standards.

STUDENT SUCCESS

I care about the success of *every* student in this class. When you have questions about the course material, questions about the subject more broadly, concerns to discuss, accommodations you need, or thoughts you want to share, please reach out to me. I am here to help you succeed.

Many students face obstacles to their education because of work or family obligations or unforeseen personal difficulties (especially as you navigate your first semester at college!). If you are experiencing challenges throughout the term that are impacting your ability to succeed in this course, or in your undergraduate career more broadly, please let me know as soon as possible so that we can work together to form a plan for your academic success.

TEXTBOOK & COURSE MATERIALS

We will not be using a textbook for this course. All the readings for the class will be provided for you on Canvas. These readings include a range of articles, research reports, book chapters, and tutorials.

LECTURE/READING QUIZZES

Whenever readings are listed on the schedule, they should be completed before the associated lecture or discussion. In order to help you learn and process the readings, short quizzes over the content of the readings will be posted via Canvas. These pre-lecture reading quizzes must be completed by 11:59 PM ET (Indiana time) the night before class (Sunday night, Tuesday night, or Thursday night, respectively). Your three lowest reading quiz scores will be dropped.

LECTURE PARTICIPATION

Clickers (IU's Top Hat response system) will be used in this class, and you are required to have a Top Hat account and a compatible device (a web-enabled smartphone, tablet, or laptop computer.) If access to such a device is a problem for you, please contact me as soon as possible so that I can help.

Clicker questions will be presented in most lectures. On days with clicker questions, you must submit responses to at least half of the clicker questions asked to earn full credit for the day's participation. Your participation in the clicker questions is a key way to improve your learning during the lectures and to provide me with feedback about what you understand. Clickers are used as formative assessment so there is no penalty for incorrect answers, but students who are answering thoughtlessly may not receive participation credit.

You will have your three lowest lecture participation scores dropped. Because you get three dropped scores, I do not make a distinction between excused and unexcused absences from the lectures. If you miss a lecture due to illness, travel, emergency, or do not answer the clicker questions for any reason, participation for that lecture will be recorded as a zero.

Clicker misconduct (e.g., responding for anyone other than yourself, answering any clicker question while not physically in the classroom, etc.) will be considered academic misconduct, and will result in significant grade reductions or failure of C104 as well as other university sanctions.

FRIDAY DISCUSSIONS

Friday's discussion sections will adopt a variety of formats including class discussions, group work, and tutorials, all focused on diving deeper into the week's material. Your engagement in the discussions, contribution to group projects, and submission of in-class work will all factor into your discussion participation grade.

There will be 11 Friday morning discussions and you will have your two lowest discussion participation scores dropped. As with the lecture participation, there is no distinction between excused and unexcused absences from the discussions.

HOMEWORK

After most discussion sections, you will have access to a homework assignment that will reinforce the ideas presented and discussed that week. You must complete each homework assignment on your own and submit your work by 11:59 PM on Wednesday following the discussion. Your lowest homework score will be dropped. Late homework will not be accepted.

EXAMS

There will be two exams this semester during your Friday discussion section (see the course schedule for dates). The exams will be a mix of short answer and essay questions and will assess what you have learned from the lectures, readings, and discussions.

CRITICAL ANALYSIS PROJECT

Midway through the semester, you will work in small teams to investigate an interesting online claim and to create a short video presentation that presents your findings in a succinct and entertaining way. This project will give you a chance to practice critical thinking, information foraging, and increase your digital literacy and software skills.

FINAL PROJECT

At the end of the semester, you will work in small teams to generate a novel research hypothesis and design a study aimed at testing that hypothesis. This project should give you a chance to explore a topic in psychological and brain sciences that you find interesting while demonstrating what you've learned about the scientific enterprise and research methods.

If you have a scheduling conflict that will interfere with a discussion section, turning in a homework assignment, or taking an exam at the scheduled time, you must let me know as soon as possible. With the exception of extreme and unforeseen circumstances, contacting me the day (or even worse, after) an assignment or exam is due will be considered an unexcused absence and will result in a zero on the late work.

Your final grade is computed using the following formula:

Lecture Participation:	7.5%
Discussion Participation:	7.5%
Reading Quizzes:	10%
Homework:	20%
Average of your two exams:	30%
Evaluating Online Claims Project:	5%
Final Project:	20%
	100%

Grading Scale:

A+: 97.0%-100%;	A: 93.0%-96.99%;	A-: 90.0%-92.99%
B+: 87.0%-89.99%;	B: 83.0%-86.99%;	B-: 80.0%-82.99%
C+: 77.0%-79.99%;	C: 73.0%-76.99%;	C-: 70.0%-72.99%
D+: 67.0%-69.99%;	D: 63.0%-66.99%;	D-: 60.0%-62.99%
F: Below 60%		

RELIGIOUS AND CIVIC OBSERVANCES

Students missing class (lecture, workshop, or exam) or needing an extension for a religious observance can find the officially approved accommodation form by going to the Vice Provost for Faculty and Academic Affairs webpage for religious accommodations. The form must be submitted at least 2 weeks prior to the anticipated absence.

STUDENT RESPONSIBILITY

Grades and feedback on student work are an integral part of the learning process. The primary goal of feedback is to guide you and help you continue learning, not to rank or evaluate you. As such, I expect you to look over your scores and the feedback we provide whenever such feedback is released, and to incorporate that feedback into your future work in the course. It is your responsibility to double-check your assignment and exam grades – both that the work itself was correctly graded and that the scores posted on Canvas match your actual grades. You have two weeks from the time an assignment or exam is returned to the class to address any grading issues. After that, the grades posted on Canvas will be considered final.

EMAIL

I expect you to be checking your IU email account (not just Canvas messages) no less than once a day. I will send frequent messages to the class with announcements, reminders, clarifications, instructions, and/or updates. You are responsible for the content of these messages exactly as if the material had been presented in class. All class-wide messages will be sent using the Canvas Announcement tool, so archived messages can always be found on the Canvas sites.

FEEDBACK

Do not wait until the end of the semester course evaluations to let me know that I could be doing something better. Tell me as soon as possible so that I can make the class valuable and relevant as we go along. If you have any feedback, good or bad, about the course or how it's being taught, please feel free to send it to me *anonymously* using this link.

ACADEMIC INTEGRITY

This course is conducted under the University's Code of Conduct & Policies. Specifically, it is considered cheating if you obtain any kind of information about answers and solutions to the assignments in this course – exams, quizzes, and homework – from any non-intended source or conversely transfer such information to others. It is also considered misconduct if you lie to me about an absence or extension relating to a homework or an exam or misrepresent your presence in the workshops. The punishment for academic dishonesty will be no less than a zero on the assignment or exam and will likely be **failure of the course**. All suspected violations of the Code will be reported to the Dean of Students (Office of Student Conduct). Sanctions for academic misconduct in this course may include a failing grade on the assignment, a reduction in your final course grade, or a failing grade in the course, among other possibilities. If you are unsure about the expectations for completing an assignment or taking a test or exam in this course, speak with me before submitting your assignment.

GENERATIVE AI

Cheating is "using, providing, or attempting to use or provide unauthorized assistance, materials, information, or study aids in any form." (*Code*, II: Responsibilities B,4,a). Cheating includes the use of generative artificial intelligence. You may not use generative AI platforms like ChatGPT, Copilot, Dall-E, QuillBot, or Spinbot for any work for this class without permission of the instructor and proper citations. Unauthorized use of generative AI in this course will constitute academic misconduct.

GROUPME AND OTHER EXTERNAL MESSAGING PLATFORMS

Please note that you may receive emails from other students about joining GroupMe, Discord, or similar external group messaging platforms for individual classes via Canvas. Even though invitations to join the group may be issued through Canvas, they do not imply the endorsement of the course instructor. While platforms like GroupMe, Discord, etc. can be an effective way of contacting classmates and clarifying information related to the course, they can also be source of unauthorized information sharing or collaboration among students. Collaborative effort on assignments, quizzes, and exams, including sharing or discussing answers when the instructor has not expressly authorized collaboration, is considered cheating. If academic dishonesty occurs via GroupMe or a similar messaging platform, everyone involved in the thread may be found responsible for academic misconduct since membership in the group suggests that that they have been able to view the information shared.

ACCESSIBILITY AND ACCOMMODATION

Every attempt will be made to provide accessibility measures (accommodations) to students with qualifying medical conditions (e.g. mental health, learning, chronic health, physical, hearing, vision, neurological, etc.), under the Americans with Disabilities Act. You must have established your eligibility for support services through Accessible Educational Services for qualifying medical conditions. Note that services are confidential, may take time to put in place, and are forward moving. Captions and alternate media for print materials may take three or more weeks to get produced. Please contact Accessible Educational Services (AES) at 812-855-7578 as soon as possible if accessibility measures are needed. The office is located on the basement floor of Eigenmann Hall, #001.

COUNSELING AND PSYCHOLOGICAL SERVICES

Stressing out over your studies? Just need someone to talk to? IU has trained, professional staff to provide confidential support. Counseling and Psychological Services and Sexual Assault Crisis Services are provided at no charge to all IU students who have paid the student health fee. If you're a first-time client, you can schedule your first, 30-minute CAPS assessment online. All other appointments

can be made by calling 812-855-5711. In an emergency you can contact CAPS 24/7 to speak to a crisis counselor. Call 812-855-5711, option 1 or contact your local hospital emergency department. You may also call the 988 Suicide & Crisis Lifeline, a national network of local crisis centers that provides free and confidential emotional support to people in suicidal crisis or emotional distress.

SEXUAL MISCONDUCT AND TITLE IX POLICY

IU policy prohibits sexual misconduct in any form, including sexual harassment, sexual assault, stalking, sexual exploitation, and dating and domestic violence. If you have experienced sexual misconduct, or know someone who has, the University can help. If you are seeking help and would like to speak to someone confidentially, you can make an appointment with the IU Sexual Assault Crisis Services at (812) 855-8900, or contact a Confidential Victim Advocate at (812) 856-2469 or cva@indiana.edu.

University policy requires me to share certain information brought to my attention about potential sexual misconduct with the campus Deputy Sexual Misconduct & Title IX Coordinator or the University Sexual Misconduct & Title IX Coordinator. In that event, those individuals will work to ensure that appropriate measures are taken and resources are made available. Protecting student privacy is of utmost concern, and information will only be shared with those that need to know to ensure the University can respond and assist. I encourage you to visit http://stopsexualviolence.iu.edu/index.html to learn more.

BIAS-BASED INCIDENT REPORTING

Bias-based incident reports can be made by students, faculty, and staff. Any act of discrimination or harassment based on race, ethnicity, religious affiliation, gender, gender identity, sexual orientation or disability can be reported through either of these options:

1) fill out an online report at https://reportincident.iu.edu/;
2) call the Dean of Students Office at (812) 855-8187

Reports can be made anonymously at https://reportincident.iu.edu.

STUDENT ENGAGEMENT ROSTER AND EARLY WARNING ALERTS

Part of my job as the instructor of this course is to make sure you are connected to the resources that will help you succeed. If you receive a message through the Student Engagement Roster that asks you to consult with your advisor, please know that the message is sent to both you and your academic advisor, who will follow up and view the feedback from this course.

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DISCLAIMER

This syllabus is an outline of the course and its policies, which may be changed for reasonable purposes

during the semester at the instructor's discretion. You will be notified in class and / or via email if any changes are made to this syllabus, and an updated syllabus will be provided on Canvas.

COLL C104, Fall 2024
Opinions, Beliefs, and Truth – Schedule

Week		Date	Description	Pre-Class Reading & Quiz
1	M	Aug 26	Introductions & Why Science Matters	
	W	Aug 28	Is Psychology A Science?	Readings for Aug 28th
	F	Aug 30	Discussion Sections: Introductions	
2	M	Sep 02	Labor Day - No Classes	
	W	Sep 04	Ignorance: The Driving Force of Science	Readings for Sept 4th
	F	Sep 06	Discussion Sections: Digital Empowerment	Readings for Sept 6th
3	M	Sep 09	Amy Minix - IU Libraries Presentation	
	W	Sep 11	Evaluating Online Knowledge	Readings for Sept 11th
	F	Sep 13	Discussion Sections: Evaluating Online Claims	
4	M	Sep 16	Processing Academic Sources, Part I	Readings for Sept 16th
	W	Sep 18	Processing Academic Sources, Part II	
	F	Sep 20	Discussion Sections: QALMRI	Readings for Sept 20th
5	M	Sep 23	It's Complicated	Readings for Sept 23rd
	W	Sep 25	Basic vs. Applied Science	Readings for Sept 25th
	F	Sep 27	Discussion Sections: Critical Analysis Project (CAP) Introduction	
6	M	Sep 30	Ethics, Part I	Readings for Sept 30th
	W	Oct 02	Ethics, Part II	Readings for Oct 2nd
	F	Oct 04	Discussion Sections: CAP Group Work	
7	M	Oct 07	Failure, Part I: A Continuum of Failures	Readings for Oct 7th
	W	Oct 09	Failure, Part II: Failing Better	Readings for Oct 9th
	F	Oct 11	No Discussion Sections - Fall Break	
8	M	Oct 14	The Importance of Diversity in Science, Part I	Readings for Oct 14th
	W	Oct 16	The Importance of Diversity in Science, Part II	
	F	**Oct 18**	**Exam 1**	
9	M	Oct 21	Generating A Great Research Question, Part I	Readings for Oct 21st
	W	Oct 23	Generating A Great Research Question, Part II	
	F	Oct 25	Discussion Sections: Measurement & Results	Readings for Oct 25th
10	M	Oct 28	Experimental Designs	Readings for Oct 28th
	W	Oct 30	Quasi-Experimental and Factorial Designs	Readings for Oct 30th
	F	Nov 01	Discussion Sections: Final Project Brainstorming	
11	M	Nov 04	Case Studies and Surveys	Readings for Nov 4th
	W	Nov 06	Correlations	Readings for Nov 6th
	F	Nov 08	Discussion Sections: Correlation vs. Causation	
12	M	Nov 11	Statistical Analysis, Part I	Readings for Nov 11th
	W	Nov 13	Statistical Analysis, Part II	
	F	Nov 15	Discussion Sections: Interpreting Results	
13	M	Nov 18	Replication and Meta-Analysis	Readings for Nov 18th
	W	Nov 20	P-Hacking and Pre-Registration	Readings for Nov 20th
	F	Nov 22	Discussion Sections: Final Project Mini-Presentations	

Week		Date	Description	
14	M	Nov 25	Thanksgiving Break - No Classes	
	W	Nov 27		
	F	Nov 29		
15	M	Dec 02	Emerging Fields I: Biotechnology	Readings for Dec 2nd
	W	Dec 04	Catch-up and Exam 2 Review	
	F	**Dec 06**	**Exam 2**	
16	M	Dec 09	Emerging Fields II: Data Science	Readings for Dec 9th
	W	Dec 11	Emerging Fields III: Generative AI	
	F	Dec 13	Final Project Check-Ins	
17	M	Dec 16	Final Projects Due at 5:00 PM	
	W	Dec 18		
	F	Dec 20		