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EPID 7030: Implementation Science Foundations in Theory and Methods
Fall 2025

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When offered: Fall 2025
Time: Tuesdays, 8:30-11:30 AM
Course units: 1.0
Location: Blockley 235

The viewed expressed by the Course Director throughout the course are their own and not those of the University of Pennsylvania, the US government, or the US Department of Veterans Affairs.

COURSE DESCRIPTION

***Summary*.** This 1-course unit PhD-level course interrogates the foundational theories and methods in implementation science with a focus on health equity. The course will provide opportunities for learners to learn and advance implementation science theory, methods, and principles to the field of epidemiology and for methods used in epidemiology to be applied to implementation science.

> *Implementation science is the study of methods to promote the adoption and integration of evidence-based practices, interventions, and policies into routine health care and public health settings to improve the impact on population health (CDC, 2024[1]).*

Learners will critically engage with the historical foundations of implementation science as well as recent innovations. The course will introduce the theories of implementation science and take a critical lens to the ways in which this theoretical foundation promotes equitable implementation. The course will also introduce current qualitative and quantitative methods used in implementation science. Learners will have the opportunity to critically apply theories and methodologies originating from epidemiology and other fields to topics in implementation science.

The overarching goals for the course are for learners 1) to critically appraise the current status quo in implementation science; 2) identify opportunities for innovation in implementation science as a way to pursue health equity; and 3) to identify how to advance research by using implementation science methods.

Relationship to similar implementation science courses at Penn. There are several foundations of implementation science courses across the University of Pennsylvania. This PhD-level course is specifically designed for learners who seek to both apply and advance implementation science theory, methods, and analysis. Masters' or certificate programs focus on the application of existing methods and analytic approaches to address evidence-practices gaps.

While there are some similarities between this PhD-level course and other masters courses, this PhD-level course investigates the theoretical underpinnings of implementation science and critically assesses existing approaches and identifies ways to advance theory, methods and analysis in implementation science with a specific focus on epidemiology (summarized in the table).

	Masters/ Certificate	PhD Course
Introduce implementation science	•	•
How to apply existing implementation science approaches	•	•
Critical assessment of existing implementation science approaches		•
Identification of ways to advance approaches in implementation science		•

In contrast, masters-level courses introduce existing best practices in implementation science and how to apply them to clinical topics. Current masters and certificate course offerings: IMP6000, HPR 6110, or HPR 6200.

[1] https://blogs.cdc.gov/genomics/2020/06/26/toward-more-precision/

Prerequisites: None. The course is specifically designed for learners in PhD programs. Non-PhD students will require approval by the course Director.

Learners are expected to have a basic understanding of the scientific process and study design (e.g., treatment and control groups, experimental testing, etc.).

Course Competencies.

1. Critical intuition for applying implementation science theories, models, and frameworks across diverse epidemiologic settings.
2. Skills in selecting appropriate implementation science study design, implementation strategies, and outcomes in epidemiologic research settings.
3. Proficiency in writing descriptions of implementation science analyses and results in appropriate scientific context.

Scientific Rigor and Reproducibility. This course is designed to teach students how to interrogate, select, apply, and innovate appropriate implementation science methodologies in their own epidemiologic scholarship and advance theory and methods at the intersection of implementation science and epidemiology in a transparent and reproducible way through clear presentation of results, conclusions, and applications of implementation science methods.

Outcomes. By the end of the course, you will be able to:

1. Describe foundational theories to the field of implementation science
2. Describe the core components of implementation science including, theories, models, and frameworks, study design, outcomes, strategies, and mechanisms
3. Examine the ways recent innovations in implementation science incorporate equity and identify additional opportunities for improvement in epidemiologic research
4. Critically examine the integration of equity in implementation science and methods in epidemiology.
5. Understand the difference between implementation science and practice and the ways in which theory interacts with the two
6. Describe challenges in equitable implementation in existing epidemiologic contexts (e.g., healthcare settings, schools, social services, etc.)
7. Apply theories and methods novel to the field of implementation science to an evidence-practice gap in epidemiologic scholarship.

Class Session Structure. Each 3-hour class session will have about 2 hours of lecture (with an embedded 20-minute break) followed by 50 minutes of facilitated discussion.

1. Admin: 10 minutes
2. Lecture: 120 minutes
3. Facilitated discussion: 50 minutes

Guidance for finding content and contacting the instructor.

	Canvas	Email	Cell
Feelings of injuring yourself or others			X
Accessing course materials	X		
Accessing assignment instructions	X		
Turning in assignments & final	X		
Course Announcements and Updates	X		
Scheduling a meeting		X	

Letting me know you'll miss class		X	
Other questions/concerns		X	

Addressing Issues Related to Disabilities. Please let me know as soon as possible if you need an accommodation for a disability (including mental health conditions). We will work together to modify course content to ensure your full participation and success. We will work with the Weingarten Center to determine appropriate academic accommodations. This course is intended to be challenging to the ways in which you think about scholarship and opportunities for getting evidence into use. That said, this goal is not intended to contribute to stress, depression, and anxiety experienced by many graduate students.

Please reach out to me if you begin feeling low. Penn offers many mental health services including CAPS and GAPSA. To the degree that I am able, I will seek to maintain confidentiality. I am required to report any experiences of sexual assault, self-injury, or intent to injure others.

Good Course Citizenship. Learners are expected to engage with intellectual humility, respect, and critical thinking. This looks like attending class prepared, asking questions, and listening to understand. We each bring our lived experiences and unique lenses to our scholarship and learning. Together, we will engage respectfully both in and outside of class sessions. We understand that we each learn and process information differently and by seeking to understand these differences, we will become better scientists and humans.

Please arrive on time or enter the room quietly if you're late or need to leave early. We will respect each other by focusing on the topic and assignments for the class session, while also acknowledging that external factors—both individual and societal may impact our ability to reach our highest functioning. Please use preferred names, pronouns, and pronunciation for each member of the course.

Science, data, and intellectual inquiry is conducted by and about humans. It therefore inherently includes our own perspectives and biases. This course intentionally focuses on equitable implementation and health equity—or the ability for all people, regardless of race, gender, class, income level, geography, etc. to reach their highest level of health. These conversations are often difficult. We each bring different perspectives and lived experiences which inform our perspectives.

We will engage with intellectual humility and openness to learning from different lived experiences. Together, we will be open to revising our perspectives and beliefs. Personal attacks of any kind will not be tolerated.

Academic Integrity. Academic scholarship is highly collaborative and this starts now. You are welcome to work with other learners on all aspects of the course. That said, <u>all work that you submit must be your own</u> with any contributions from others explicitly noted.

Reminder: the goal of this course is for you, as an emerging scientist, to learn and critically examine how implementation science may be applied to epidemiology and your own field of interest and scholarship.

Course policy on the use of language model (LLM)-driven chatbots. Large language model (LLM)-driven chatbots, including ChatGPT, do not have access to materials which are recent or behind

paywalls. Like all AI, tools like ChatGPT are subject to bias. You must take full accountability for whatever you submit, even if it was partly generated by AI. Assignments are intended to provide opportunities to display competency beyond what current AI tools can demonstrate.

Therefore LLM, like ChatGPT, will not be accepted as a credited author in answer to any work in this course. All cited author attributions included in your work must demonstrate accountability for the work, and LLM tools cannot take such responsibility. As a result, you are not allowed to use, copy (in part or in whole), or cite (in part or in whole) any result from a query posed to a LLM application or website in your answers on problem sets or on your final project. Doing so will be considered plagiarism and a violation of Penn's academic code. That said, you are welcome to use LLM applications to stimulate your thinking about ways to address your work. Please contact me if you have any questions about this policy.

Plagiarism. You are expected to abide by the Penn Code of Academic Integrity, found at the following link: https://catalog.upenn.edu/pennbook/code-of-academic-integrity/.

Acknowledgements. Nothing in life in insular and the development of this course is no exception. Special thanks to Meghan Lane-Fall, Adam Naj, Sunni Mumford, and John Holmes for their early feedback on this course and syllabus and the many example syllabi I reviewed.

COURSE REQUIREMENTS

Grade. We will determine your grade as a combination of class attendance and participation (40%), discussion facilitator (10%), assignments (25%), and the final (25%).

Grading breakdown

Class attendance	40%
Discussion Facilitator	10%
Assignments	25%
Final Paper	25%

A+	98.00 to 100	B+	88.00 to 89	C+	78.00 to 79	D+	68.00 to 69
A	93.00 to 97	B	83.00 to 87	C	73.00 to 77	D	63.00 to 67
A-	90.00 to 92	B-	80.00 to 82	C-	70.00 to 72	F	0 to 62

Class attendance and participation (40%). Although attendance at each class is required, I recognize that exceptional circumstances do occur. **The maximum number of excused absences is two.** You do not need to obtain permission to miss class—in the event that you must miss class, complete all readings and breakout activities and write a 700-800-word review of what you took from the lecture in Canvas under "Makeup Assignment." If you miss more than 2 classes, your final grade will drop by half of a letter (e.g., A to A-) In exceptional circumstances, please contact the course faculty.

Participation will be measured by 3-5 critical appraisal bullet points and questions based on the week's reading. This will be submitted to Canvas by 12:00 noon one-day prior to class and will be used to help frame the class discussion. As this is a seminar and discussion-oriented class, I expect you to participate fully in the course. Class attendance is worth 40% of your grade and attendance to each class is worth one point.

Discussion Facilitator (10%). Throughout the semester, learners will be required to lead group discussions relevant to topics discussed during class. The Discussion Facilitator will bring 1-2 additional readings from the epidemiologic peer reviewed literature to further contextualize course readings. Facilitators are expected to send additional readings to the Course Director at least one week before the assigned class. Signups for discussion leader classes will happen during the first session. Participation as the Discussion Facilitator is worth 10% of your grade and is graded on a 10-point scale.

Assignments (25%). This course includes 6 assignments. Each assignment should respond to the prompt, include citations, and be approximately 700-800 words. Assignments are graded on a 10-point scale, reflecting your demonstration of understanding and critical thinking related to the assignment prompt. Each assignment is due by the start of class listed. You may resubmit your assignment for revisions as many times as you wish to receive an updated grade. All revisions must be submitted before the start of Class 14. The six assignments are worth 25% of your grade and are each graded on a 10-point scale.

The purpose of these assignments is to demonstrate you are processing and applying the course materials. Therefore, there is not necessarily one "right" answer.

Final Paper (25%). There are two options for the Final Paper (see additional details below). All submissions should include citations (not included in word count) and may include figures or tables

as is useful (also not included in word count). The final paper is worth 25% of your grade and is graded on a 50-point scale.

Course Schedule. All readings and assignments are contained in Canvas, except readings from Diffusion of Innovations Theory. Consider Canvas as the source of truth for due dates and class requirements.

Course Topics and Outline.

Class Number	Date	Topics	Assigned readings	Assignments Due
Class 1	8/26/25	The early history of implementation science, multidisciplinary origins, and applications in epidemiology	Rogers DoI: Ch 1 & 2 Neta et al., 2018 Jones, 2020	
Class 2	9/2/25	Diffusions of Innovations Theory and its role in the field of implementation science	Rogers DoI: Ch 3-5	Assignment 1
Class 3	9/9/25	Diffusion of Innovations Theory, cont.	Rogers DoI: Ch 6-8	
Class 4	9/16/25	Novel approaches to implementation science theory	Rogers DoI: Ch 9-11	
Class 5	9/23/25	Theories, Models, and Frameworks in implementation science and the intersection of health equity	1. Nilsen, 2015 2. Wang, et al., 2023 3. Bronfenbrenner, 1994 4. Kislov, et al., 2019	Assignment 2
Class 6	9/30/25	Equitably assessing context in implementation science	1. Damschroder et al., 2009 2. Damschroder et al., 2022a 3. Allen et al., 2021	
Class 7	10/7/25	Defining and operationalizing implementation science outcomes	1. Proctor et al., 2011 2. Proctor et al., 2023 3. Damschroder et al., 2022 4. Glasgow et al., 1999 5. Holtrop et al., 2021	Assignment 3
Class 8	10/14/25	Approaches to behavior change (e.g., implementation strategies)	1. Powell et al., 2015 2. Waltz et al., 2015 3. Abraham & Michie, 2008 4. Ashcraft et al., 2024 5. Proctor et al., 2013	Assignment 4
Class 9	10/21/25	Novel approaches to identifying mechanisms	1. Lewis et al., 2018 2. Lewis et al., 2022	

		in implementation science to approach causal inference	3. Kilbourne et al., 2023	
Class 10	10/28/25	Qualitative methods in implementation science & epidemiology	1. Clarke & Braun, 2017 2. Nevedal et al., 2021 3. Lewinski et al., 2021 4. Bannister-Tyrrell et al., 2020	Assignment 5
Class 11	11/4/25	Quantitative and mixed methods in implementation science & epidemiology	1. Mettert et al., 2020 2. Chamberlain et al., 2011 3. Wong et al., 2022 4. Lane-Fall, 2023	
Class 12	11/11/25	Implementation Science trial design	1. Curran et al., 2012 2. Curran et al., 2022 3. Brown et al., 2006 4. Prost et al., 2015	
Class 13	11/18/25	Novel approaches to causal inference in implementation science	1. Kidwell, & Almirall, 2023 2. Knox et al., 2023 3. Fortney et al., 2024	Assignment 6
Class 14	11/24/25	No class—Thanksgiving		
Class 15	12/2/25	Challenges to equitable implementation science—where do we go from here?	1. Brownson et al., 2021 2. Lett et al., 2022 3. Bradley et al., 2024	Final Project
Class 16	12/16/25	Office hours		

REQUIRED READINGS

All articles will be posted on Canvas and are available through the Penn Library and/or are open access. It is strongly recommended to read articles in the order listed. Supplementary and additional readings and resources will be provided in course lectures.

Book

1. Rogers, E.M. (2003) Diffusion of Innovations. Free Press, New York.

Articles

Class 1

1. Neta G, Brownson RC, Chambers DA. Opportunities for epidemiologists in implementation science: a primer. American journal of epidemiology. 2018 May 1;187(5):899-910.
2. Jones CP. Levels of racism: a theoretic framework and a gardener's tale. Am J Public Health. 2000 Aug;90(8):1212-5. doi: 10.2105/ajph.90.8.1212. PMID: 10936998; PMCID: PMC1446334.

Class 5

1. Nilsen, P. Making sense of implementation theories, models and frameworks. *Implementation Sci* **10**, 53 (2015). https://doi.org/10.1186/s13012-015-0242-0
2. Wang Y, Wong EL, Nilsen P, Chung VC, Tian Y, Yeoh EK. A scoping review of implementation science theories, models, and frameworks—an appraisal of purpose, characteristics, usability, applicability, and testability. Implementation Science. 2023 Sep 19;18(1):43.
3. Bronfenbrenner U. Ecological models of human development. International encyclopedia of education. 1994 Mar 4;3(2):37-43.
4. Kislov R, Pope C, Martin GP, Wilson PM. Harnessing the power of theorising in implementation science. Implementation Science. 2019 Dec;14:1-8.

Class 6

1. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implementation science. 2009 Dec;4:1-5.
2. Damschroder LJ, Reardon CM, Widerquist MA, Lowery J. The updated Consolidated Framework for Implementation Research based on user feedback. Implementation science. 2022 Oct 29;17(1):75.
3. Allen M, Wilhelm A, Ortega LE, Pergament S, Bates N, Cunningham B. Applying a race (ism)-conscious adaptation of the CFIR framework to understand implementation of a school-based equity-oriented intervention. Ethnicity & disease. 2021 May 20;31(Suppl 1):375.
4. ***CFIR User Guide if available.

Class 7

1. Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, Griffey R, Hensley M. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. Administration and policy in mental health and mental health services research. 2011 Mar;38:65-76.
2. Proctor EK, Bunger AC, Lengnick-Hall R, Gerke DR, Martin JK, Phillips RJ, Swanson JC. Ten years of implementation outcomes research: a scoping review. Implementation Science. 2023 Jul 25;18(1):31

3. Damschroder LJ, Reardon CM, Opra Widerquist MA, Lowery J. Conceptualizing outcomes for use with the Consolidated Framework for Implementation Research (CFIR): the CFIR Outcomes Addendum. Implementation science. 2022 Jan 22;17(1):7.
4. Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. American journal of public health. 1999 Sep;89(9):1322-7.
5. Holtrop JS, Estabrooks PA, Gaglio B, Harden SM, Kessler RS, King DK, Kwan BM, Ory MG, Rabin BA, Shelton RC, Glasgow RE. Understanding and applying the RE-AIM framework: clarifications and resources. Journal of clinical and translational science. 2021 Jan;5(1):e126.

Class 8

1. Powell BJ, Waltz TJ, Chinman MJ, Damschroder LJ, Smith JL, Matthieu MM, Proctor EK, Kirchner JE. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. Implementation science. 2015 Dec;10:1-4.
2. Waltz TJ, Powell BJ, Matthieu MM, Damschroder LJ, Chinman MJ, Smith JL, Proctor EK, Kirchner JE. Use of concept mapping to characterize relationships among implementation strategies and assess their feasibility and importance: results from the Expert Recommendations for Implementing Change (ERIC) study. Implementation Science. 2015 Dec;10:1-8.
3. Abraham C, Michie S. A taxonomy of behavior change techniques used in interventions. Health psychology. 2008 May;27(3):379.
4. Proctor EK, Powell BJ, McMillen JC. Implementation strategies: recommendations for specifying and reporting. Implementation science. 2013 Dec;8:1-1.
5. Ashcraft LE, Goodrich DE, Hero J, Phares A, Bachrach RL, Quinn DA, Qureshi N, Ernecoff NC, Lederer LG, Scheunemann LP, Rogal SS. A systematic review of experimentally tested implementation strategies across health and human service settings: evidence from 2010-2022. Implementation Science. 2024 Jun 24;19(1):43.

Class 9

1. Lewis CC, Klasnja P, Powell BJ, Lyon AR, Tuzzio L, Jones S, Walsh-Bailey C, Weiner B. From classification to causality: advancing understanding of mechanisms of change in implementation science. Frontiers in public health. 2018 May 7;6:136.
2. Lewis CC, Klasnja P, Lyon AR, Powell BJ, Lengnick-Hall R, Buchanan G, Meza RD, Chan MC, Boynton MH, Weiner BJ. The mechanics of implementation strategies and measures: advancing the study of implementation mechanisms. Implementation Science Communications. 2022 Oct 22;3(1):114.
3. Kilbourne AM, Geng E, Eshun-Wilson I, Sweeney S, Shelley D, Cohen DJ, Kirchner JE, Fernandez ME, Parchman ML. How does facilitation in healthcare work? Using mechanism mapping to illuminate the black box of a meta-implementation strategy. Implementation Science Communications. 2023 May 16;4(1):53.

Class 10

1. Clarke V, Braun V. Thematic analysis. The journal of positive psychology. 2017 May 4;12(3):297-8.
2. Nevedal AL, Reardon CM, Opra Widerquist MA, Jackson GL, Cutrona SL, White BS, Damschroder LJ. Rapid versus traditional qualitative analysis using the Consolidated

Framework for Implementation Research (CFIR). Implementation Science. 2021 Jul 2;16(1):67.
3. Lewinski AA, Crowley MJ, Miller C, Bosworth HB, Jackson GL, Steinhauser K, White-Clark C, McCant F, Zullig LL. Applied rapid qualitative analysis to develop a contextually appropriate intervention and increase the likelihood of uptake. Medical care. 2021 Jun 1;59:S242-51.
4. Bannister-Tyrrell M, Meiqari L. Qualitative research in epidemiology: theoretical and methodological perspectives. Annals of epidemiology. 2020 Sep 1;49:27-35.

Class 11
1. Mettert K, Lewis C, Dorsey C, Halko H, Weiner B. Measuring implementation outcomes: An updated systematic review of measures' psychometric properties. Implementation Research and Practice. 2020 Jul;1:2633489520936644.
2. Chamberlain P, Brown CH, Saldana L. Observational measure of implementation progress in community based settings: the stages of implementation completion (SIC). Implementation Science. 2011 Dec;6:1-8.
3. Wong DR, Schaper H, Saldana L. Rates of sustainment in the Universal Stages of Implementation Completion. Implementation Science Communications. 2022 Dec;3:1-2.
4. Lane-Fall MB. Why epidemiology is incomplete without qualitative and mixed methods. American Journal of Epidemiology. 2023 Jun;192(6):853-5.

Class 12
1. Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. Medical care. 2012 Mar 1;50(3):217-26.
2. Curran GM, Landes SJ, McBain SA, Pyne JM, Smith JD, Fernandez ME, Chambers DA, Mittman BS. Reflections on 10 years of effectiveness-implementation hybrid studies. Frontiers in Health Services. 2022 Dec 8;2:1053496.
3. Brown CA, Lilford RJ. The stepped wedge trial design: a systematic review. BMC medical research methodology. 2006 Dec;6:1-9.
4. Prost A, Binik A, Abubakar I, Roy A, De Allegri M, Mouchoux C, Dreischulte T, Ayles H, Lewis JJ, Osrin D. Logistic, ethical, and political dimensions of stepped wedge trials: critical review and case studies. Trials. 2015 Dec;16:1-1.

Class 13
1. Kidwell KM, Almirall D. Sequential, multiple assignment, randomized trial designs. Jama. 2023 Jan 24;329(4):336-7
2. Knox J, Schwartz S, Duncan DT, Curran G, Schneider J, Stephenson R, Wilson P, Nash D, Sullivan P, Geng E. Proposing the observational–implementation hybrid approach: designing observational research for rapid translation. Annals of epidemiology. 2023 Sep 1;85:45-50.
3. Fortney JC, Curran GM, Lyon AR, Check DK, Flum DR. Similarities and differences between pragmatic trials and hybrid effectiveness-implementation trials. Journal of general internal medicine. 2024 Jul;39(9):1735-43.

Class 14

To be determined.

Class 15

1. Brownson RC, Kumanyika SK, Kreuter MW, Haire-Joshu D. Implementation science should give higher priority to health equity. Implementation Science. 2021 Dec;16:1-6.
2. Lett E, Adekunle D, McMurray P, Asabor EN, Irie W, Simon MA, Hardeman R, McLemore MR. Health equity tourism: ravaging the justice landscape. Journal of medical systems. 2022 Mar;46(3):17.
3. Bradley CD, Irie WC, Geng EH. Situating implementation science (IS) in res (IS) tance: a conceptual frame toward the integration of scholarship from the black radical tradition. Frontiers in Public Health. 2024 Jan 11;11:1286156.

DISCUSSION FACILITATOR SIGN-UP

Class Number	Date	Discussion Facilitator
Class 1	8/26/25	Dr. Ashcraft
Class 2	9/2/25	
Class 3	9/9/25	
Class 4	9/16/25	
Class 5	9/23/25	
Class 6	9/30/25	
Class 7	10/7/25	
Class 8	10/14/25	
Class 9	10/21/25	
Class 10	10/28/25	
Class 11	11/4/25	
Class 12	11/11/25	
Class 13	11/18/25	
Class 14	11/24/25	No class- Thanksgiving
Class 15	12/2/25	

ASSIGNMENTS

Assignment	Due Date
Assignment 1: Description of social problem	09/02/25
Assignment 2: Theory critique	09/23/25
Assignment 3: Critical context assessment in population health	10/07/25
Assignment 4: Outcome integration & critique	10/14/25
Assignment 5: Critical approaches to understanding IS strategies & mechanisms	10/28/25
Assignment 6: Innovations in study design	11/18/25

Each assignment is due before class begins on the due date.

Assignment 1: Identifying and defining a social problem of interest.

Describe a social problem of interest. What is the known impact on population health? What is the evidence-practice gap? Who experiences this gap? Where does this evidence-practice gap exist (e.g., geography, clinical setting etc.)? What do people experiencing the evidence-practice gap think about the gap? How is this problem typically described in the academic and popular media? Critically respond to these prompts with citations in about 700-800 words (citations not included in word count).

Assignment 2: Theory critique.

Critically examine an implementation science theory, model, or framework. What are ways that it adequately addresses its stated goal? In what ways does it fall short? Identify another theory, model, or framework not typically used in implementation science. Describe how this theory, model or framework may completement the identified gaps from the implementation science theory, model, or framework. Describe to what degree these two theories, models, or frameworks address and promote factors of health equity. Critically respond to these prompts with citations in about 700-800 words (citations not included in word count).

Assignment 3: Critical context assessment in population health.

Describe approaches to assess context at the micro, mezzo, macro levels for a social problem of interest. What considerations are specific to context assessment at each of these levels? How do these approaches differ and complement traditional approaches used in epidemiology? Critically respond to these prompts with citations in about 700-800 words (citations not included in word count).

Assignment 4: Outcome integration and critique.

Define two outcomes traditionally used in epidemiologic scholarship and how they may completement implementation science outcomes. Identify applied examples from the peer reviewed literature of these outcomes and identify ways the epidemiologic outcomes could be applied to the implementation science literature and vice versa. Critically respond to these prompts with citations in about 700-800 words (citations not included in word count).

Assignment 5: Critical approaches to understanding IS strategies and mechanism.

Identify and operationalize three implementation strategies of interest for a hypothetical implementation effort. Identify potential mechanisms of action for each of these strategies. Identify gaps in the existing literature for measuring implementation strategies and identifying mechanisms. Propose potential approaches to address the gap(s). Critically respond to these prompts with citations in about 700-800 words (citations not included in word count).

Assignment 6: Innovations in study design.

Describe one type of study design commonly used in implementation science. Critically examine its strengths and weaknesses. Introduce and describe a study design commonly used in epidemiology that may address these weaknesses and evaluate implementation of an innovation. Critically respond to these prompts with citations in about 700-800 words (citations not included in word count).

FINAL PAPER

All submissions should include citations (not included in word count) and may include figures or tables as is useful (also not included in word count). The final paper is worth 25% of your grade. The final assignment is due on **Friday, December 5, 2025 at 5:00 PM EST**

Option 1. *Theory critique.*
Write a 4,000-word critique of a theory, model, or framework used in the field of implementation science with specific attention to the degree to which it promotes health equity and aligns with the field of epidemiology. You may build on what you submitted for Assignment 2, or you may select a different theory, model, or framework.

1. Briefly describe a social problem, its impact, and an innovation which addresses the problem.
2. Briefly summarize the theory, model, or framework and it's stated goal.
3. Describe the degree to which it promotes health equity and aligns with the field of epidemiology with examples from the peer reviewed literature.
4. Propose two methods for the ways in which the theory, model, or framework can be improved, pulling from other scientific disciplines

Option 2. *Innovations in study design*
Write a 4,000-word proposal for the application of implementation science theory, outcomes, study design, strategies, mechanisms, and methods to address a social problem of interest. You may build on what you submitted for Assignment 6, or you may select a different study design.

1. Briefly describe a social problem, its impact, and an innovation which addresses the problem.
2. Describe the theoretically-based outcomes, study design, implementation strategies, and potential mechanisms related to this problem using best practices from the literature.
3. Propose an innovative study design for addressing this problem borrowing from approaches used within and outside of implementation science.