**INTS 375 Special Topic - Design Thinking: Health, Medicine, and Society**

Fall 2019

School of Integrative Studies

College of Humanities and Social Sciences

George Mason University

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**Day/Time:** Thursdays 12:00 – 1:15 pm

**Location:** Robinson Hall B442

**Credits**: 4

**Office hours:** Thursdays 2:30 – 4:00 and Fridays by appointment.

 Phone/Video Conference appointments may also be arranged.

**About the course:**

This course offers an introductory approach to understanding and exploring the interrelationship of health, medicine and society using systems thinking frameworks and human-centered design tools.

Systems-thinking is a mindset that is grounded in the reality that we live in webs of interdependence: environmental changes impact disease emergence, malnutrition, and diarrheal disease; income is a key determinant of health; education influences population growth, etc. This mindset can be useful when designing solutions that incorporate a broad perspective of social, cultural, economic, environmental, and policy perspectives.

Through this course, students will learn how to translate the fundamentals of systems thinking and use applications of design tools to solve present-day local or global challenges related to Medicine, Health and/or Society.  The course will cover topics that demonstrate the link between health and medicine with social, cultural, environmental, economic, and political factors; explore the key determinants of health; uncover inherent flaws in health system frameworks through design thinking tools; and draw connections between gender, education, culture, and belief systems in managing epidemics and chronic illnesses.

The course will include an “unpacking” of the system mechanics of actual health and medical interventions designed and implemented by the course instructor; these include international development projects funded by USAID and the Gates Foundation such as designing a mobile app that prompted pregnant women to seek emergency care, ‘Uber-style’ taxi voucher schemes to transport pregnant women to health clinics, building 24-hour emergency clinics for labor and delivery; designing drop-in HIV/AIDS clinics for marginalized populations in Bangladesh; developing a novel male-focused program in Ethiopia to improve the nutrition of infants and young children; developing interactive comic books and mass media to address gender norms in addressing adolescent sexual reproductive health in Guyana; and leveraging improved health access as a way to encourage citizen engagement in the political process in Bangladesh. In addition to practical applications, students will learn the theoretical frameworks that underpin these interventions including theories of change and behavior change pathways.

Using principles of systems-thinking, application of design-thinking tools, and drawing from actual systems-thinking designs from the instructor’s work and other guest presenters, students will create their own design challenge prototype to address or solve a school, work, or community health or social challenge.

**Hybrid Course with Experiential Learning of a minimum of 25 Hours**

This is a 4-credit hybrid course with a focus on experiential learning and problem solving. The class will meet in-person once a week to learn about tools and examples from case studies designed by the instructor with time devoted outside of class to: 1) identify existing data about the student’s chosen problem, 2) observe and document the problem, 3) conduct interviews among key stakeholders or those impacted by the problem, 4) synthesize and map the causal web of the problem, 5) frame the problem in a new way as a result of the systems thinking design approach, 6) identify a new or different way of approaching the problem or leveraging key insights based on your systems thinking approach, 7) plan how it will be tested 8), develop oral and written communication vehicles to present the solution (PPT, video, causal map, etc.).

**Course Learning Objectives:**

After completion of the course the student should be able to:

1. Understand the interconnectedness between social, health, educational, economic, environmental and political factors as it relates to ‘wicked problems’.
2. Be able to use mapping tools such as the 5 Whys, Fishbone diagrams, and Journey Maps to unpack a problem and it’s interconnected causes.
3. Understand from lecturer cases studies how systems thinking and related behavior change theories, frameworks and tools help in solving complex, interdependent problems.
4. Be able to identify a complex or ‘wicked’ problem (a problem with multiple causes) in your work or community and apply principles of systems thinking and human-centered design tools.
5. Demonstrate ability to define a systems design problem [e.g. problems with many interdependent factors] either at Mason, in your work, or your community.
6. Demonstrate ability to apply tools from design thinking to explore your problem from on-site observations and interviews with stakeholders with different perspectives.
7. Apply findings to reframe a problem and identify new solutions or ways to leverage new insights, or perspectives of new audiences (not previously considered).
8. Design a simple experimental design to test your solution.
9. Develop oral presentation and written design document (8-10 slide PPT) to communicate solution and basis of solution (data, observations, interviews, causal map).

**Class Design and Learning Principles:**

The course will be designed based on the instructor’s teaching philosophy that applies *game-design* principles:

Engage: Activate the motivation and desire to learn

Explore: Learn through exploration and discovery

Reflection and Feedback: Write and converse about the﻿﻿﻿﻿﻿﻿﻿﻿﻿ learning and receive feedback

Apply: Deepen the learning through application; problem solving

The design of the class will typically begin with an interactive presentation that serves to activate and **engage** students in the topic or issue for the class followed by class discussions and small group exercises to allow for **exploration and reflection** on the topic or ideas. The class is highly interactive and requires reading of scholarly journal articles, media articles and reports, as well as viewing of Ted Talks, documentaries and other videos in addition to writing exercises and group activities. The class also will encourage analysis and critique of the readings as well as instructor and classmate presentations in order to **apply your learning** and develop your critical thinking skills. This requires that you do the reading in advance of class with the class time devoted to applying the reading through discussions and group work and exercises.

Most classes will have paired group activities that will require you to be prepared in order to participate in the in class activity. Participation in small group activities and large group discussions will factor to in to your participation grade. If you miss a class due to an unexcused absence, you may not make up the assignment. Moreover, all group activities are designed to enable you to work on your final project—the design challenge document.

**GENERAL COURSE POLICIES:**

**Attendance**

**Attendance is REQUIRED. This class meets in person once a week for an hour and 15 minutes. Missing even one class will impact your ability to fully meet the requirements of the class. If you miss more than 3 classes you will earn an F for the class. If you miss two classes your earned grade will be reduced by one letter grade. There will be one class, October 31, when we will not meet as a group but you will be expected to do the field-work required for this class. We will also not meet on Thanksgiving.**

**Paperless Classroom**

We will use the Blackboard online course management system to minimize paper use. Our aim is to collaboratively adopt policies that will balance academic needs with resource conservation concerns. Please only upload and submit assignments through the Assignment Link on BlackBoard. The link will close after the ‘date due’ has passed. Please DO NOT email assignments as attachments or hand in hard copies—they will not be accepted, nor graded.

## Late Work, Time Management and Student Coaching

Papers and other assignments are to be submitted on the date indicated on the Course Schedule. **No work will be accepted late**, without a doctor’s note or note of death in the family or through special accommodations that you arranged in advance. Once you graduate, and those of you who are already working, know that everything is now submitted on-line -- job applications, graduate school applications, grant applications, etc. Extensions are not an option, unless you have an accommodation, or a circumstance that you have shared with me BEFORE the due date. Please begin now to learn how to plan and budget your time weighing competing priorities, interests, family, friends, fun and also anticipating what could come up (getting sick, having to work unexpectedly, having a friend from out of town visit, car breaking down, breaking nose while playing soccer, sister’s wedding, no appointments at the Writing Center, protests at the Supreme Court that you get arrested for, brother getting arrested, having to take your mother, grandmother, aunt to the doctor; having to babysit your brother, late night at frat party, DC concert, etc.) (Yes, these are all actual explanations of missed classes, assignments etc.) Below is information for FREE time management/academic coaching services that several of my former students have utilized and they report that it has transformed their college experience. Planning out each week, and ideally your academic semester, will also reduce anxiety that can come with feeling overwhelmed.

Please call **703-993-2380**, email **lsstaff@gmu.edu**, or stop by Learning Services in **Student Union Building I, Suite 3129 to schedule an appointment. These services are free and part of your tuition.**

**Writing Center**

The GMU Writing Center (http://writingcenter.gmu.edu/) provides **free** one-on-one sessions in which you can get expert feedback on drafts of the design document writing assignments. While the tutors will not fix your papers for you, they will work with you to identify and correct rough areas in your document and to build your writing, proofreading, and editing skills. This is a service available to **all** students. Students who need ESL Support can be given on-going support. MAKE A NOTE OF THE WRITING DEADLINES IN THIS SYLLABUS AND MAKE AN APPOINTMENT IN ADVANCE OF THE DEADLINE FOR THE WRITING CENTER TO REVIEW YOUR DESIGN DOCUMENT. THEY FILL UP QUICKLY AND NOT GETTING AN APPTOINTMENT IS NOT AN EXCUSE FOR NOT HAVING YOUR DOCUMENT REVIEWED. **The service they provide is excellent, and will likely improve your paper by at least one letter grade.**

## The lecturer expects that the required written assignments be prepared using grammatically correct business English, prepared without spelling mistakes and follows the assignment prompts provided, and appropriately notes citations using APA format, where appropriate. If you do not know how to format using the APA style of citations, please visit the Writing Center or refer to the Quick Guides on APA Formatting or the PURDUE OWL Website. Failure to properly cite references can be grounds for plagiarism.

## Electronic Devices

Electronic devices are to be used during in-class group activities only. Use of laptops, tablets or phones for taking notes during lectures/presentations are NOT to be used. Summarizing, paraphrasing, and ‘concept mapping’ (which you will do a LOT of in this class) are encouraged to be done by hand in a dedicated notebook or sketchbook (ideally from recycled paper). Research validates that students learn and retain information better when writing by hand than by attempting to write notes verbatim. Also, lectures/presentations will be available to students. <https://www.npr.org/2016/04/17/474525392/attention-students-put-your-laptops-away>.

In the way that research validates handwritten notes to help learners retain information, research also proves that even a short “digital distraction” results not only in distraction for the short time that a learner disengages from the classroom, BUT, takes them almost 30 minutes to refocus and fully refocus, not to mention the ‘second hand’ distraction that is inflicted upon other students.

## MASON POLICIES -

## Honor Code

Mason is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for an assignment, you will perform that assignment. When you rely on someone else’s work in an aspect of the performance of that assignment, you will give full credit in the proper, accepted form (for this class using APA citations). Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

*Work created for previously taken classes cannot be turned in for credit in this course, however, may be adapted or built upon after speaking to the instructor.*

**Sexual Harassment, Sexual Misconduct, and Interpersonal Violence**

George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students who believe that they have been sexually harassed, assaulted or subjected to sexual misconduct to seek assistance and support. [University Policy 1202: Sexual Harassment and Misconduct](https://universitypolicy.gmu.edu/policies/sexual-harassment-policy/) speaks to the specifics of Mason’s process, the resources, and the options available to students.

**Notice of mandatory reporting of sexual assault, interpersonal violence, and stalking**: As a faculty member, I am designated as a “Responsible Employee,” and must report all disclosures of sexual assault, interpersonal violence, and stalking to [Mason’s Title IX Coordinator](https://diversity.gmu.edu/title-ix/what-title-ix) per University [Policy 1412](https://universitypolicy.gmu.edu/policies/reporting-of-clery-act-crimes-andor-prohibited-sexual-conduct/). You may seek assistance from Mason’s Title IX Coordinator, Jennifer Hammat, by calling 703-993-8730 or email cde@gmu.edu. If you wish to speak with someone confidentially, please contact one of Mason’s confidential resources, such as [Student Support and Advocacy Center](https://ssac.gmu.edu/faculty-and-staff/) (SSAC) at 703-993-3686 or [Counseling and Psychology Services](https://caps.gmu.edu/) (CAPS) at 703-993-2380. The 24-hour Sexual and Intimate Partner Violence Crisis Line for Mason is 703-380-1434.

**Privacy**

[Student privacy](http://registrar.gmu.edu/facultystaff/student-privacy/) is governed by the [Family Educational Rights and Privacy Act (FERPA)](http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html) and is an essential aspect of any course.   Students must use their MasonLive email account to receive important University information, including communications related to this class. I will not respond to messages sent from or send messages to a non-Mason email address.

## Diversity Statement

## The School of Integrative Studies is an intentionally inclusive community that celebrates diversity and strives to have faculty, staff and students that reflect the diversity of our plural society. We do not discriminate on the basis of race, class, linguistic background, religion, gender identity, sex, sexual orientation, ethnicity, age, or physical ability.

**Accommodations for Students with Disabilities**

If you are a student with a disability and you need academic accommodations, please see the instructors and contact the Office of Disability Services (ODS) at 703.993.2474. All academic accommodations must be arranged through that office. Faculty Contact (presenting me with your accommodations form) must be made during the first two weeks of class. Accommodations cannot be made retroactively.

## Blackboard

To access blackboard, type courses.gmu.edu into the URL address bar of the web browser of your choice. Enter the username and password from your GMU email account. The use of Blackboard is essential in this course, so if you have technical problems, please contact the IT department (email address can be found on Blackboard’s homepage) as soon as possible.

Each class will have an associated Module with a folder for all readings and assignments. All assignments will be uploaded through the Assignment Link within the Module for that week. The link will be closed after the due date has passed.

**BlackBoard Assignments, Submissions and Class Preparation:** All assignments and due dates are listed in the syllabus and course schedule WITH LINKS TO UPLOAD ALL ASSIGNMENTS ON BlackBoard. This is an environmentally-friendly PAPER-FREE course. ALL ASSIGNMENTS MUST BE UPLOADED TO BLACKBOARD IN THE ASSIGNMENT LINK PROVIDED ON THE DUE DATE LISTED. **NO PAPER COPIES WILL BE ACCEPTED, NOR EMAILS.** YOU *MAY* TAKE A CAMERA SHOT OF YOUR HAND WRITTEN DRAWINGS OR DIAGRAMS AND UPLOAD. **PLEASE TYPE USING BUSINESS ENGLISH USING WORD DOCUMENT SOFTWARE AND NOT PAGES, NOTES or GOOGLE DOCS.**  Students are responsible for reviewing the syllabus and course schedule and knowing deadlines. REMINDERS MAY NOT BE GIVEN. All late/unexcused submissions or submissions in a file that I cannot open (see above) will be given a “0”.

**NOTE:** THIS IS NOT A CLASS WHERE YOU LEARN INFORMATION OR FACTS (THE “WHAT”) MEMORIZE AND REGURGITATE. OR A CLASS WHERE YOU TAKE A QUIZ WITHOUT DOING THE READING, OR SHOW UP TO CLASS WITHOUT BEING PREPARED. YOU WILL BE CHALLENGED TO THINK ABOUT THE “WHY”, THE “HOW” AND “SO WHAT” AND REFLECT ON THE “WHAT ELSE” AND CONSIDER “NOW WHAT”? ***CONSIDERING OTHER OPTIONS OR POSSIBILITIES IS THE DEFINITION OF CRITICAL THINKING AND PROBLEM SOLVING SKILLS ARE MORE DESIRED BY EMPLOYERS THAN A HIGH GPA.*** LET ME REPEAT HIS. CRITICAL THINKING AND PROBLEM SOLVING SKILLS ARE MORE DESIRED BY EMPLOYERS THAN A HIGH GPA. YOU ARE REQUIRED TO CRITICALLY THINK AND APPLY KNOWLEDGE GAINED FROM READINGS, LECTURES AND ACTIVITIES AND TO WORK IN TEAMS TO CHALLENGE EACH OTHER AND TO CREATE NEW WAYS OF REFLECTING ON ‘WHAT ELSE’ OR ‘NOW WHAT’. GRADES ARE EARNED AND NOT ‘GIVEN’. I SEE MY ROLE AS A FACILITATOR OF YOUR LEARNING, BUT YOU ARE REQUIRED TO MAKE THE EFFORT TO DO THE READINGS, COME TO CLASS PREPARED, ENGAGE IN DISCUSSIONS, DO THE EXPERIENTIAL LEARNING EXERCISES, AND MAKE APPOINTMENTS WITH ME OR WITH THE WRITING CENTER TO HELP FACILITATE YOUR LEARNING.

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| **Evaluation:** | **% of** **Final Grade** | **Date****Due** |
| Activities on systems-thinking frameworks and design tools (done in teams with *individual* submissions)(5% each) |  25%  | Systems Thinking: Obesity #1: DUE 9/12Systems Thinking: Wicked Problems #2: DUE 9/19Your perception of a problem #3: Define your design challenge: Step 1: A problem statement with accompanying Journey Map that identifies what you think might be ‘pain points’(refer back to the guest lecture and pain points in shopping). DUE 9/24Shared/consolidated design problem #4: Define your design challenge in terms of what is known: existing data (using authoritative sources); data on multiple causes of the problem with evidence to prove the problem needs a new or different solution. (Step 2 of Design Process): DUE 10/3Mapping: Design Challenge Activity#5. See Attachment A and B of Toolkit for reference.Begin working in teams or Individually (if working alone), map out your research strategy/approach. Brainstormwho you need to interview; what you need to observe, whereyou need to go, etc. DUE 10/10  |
| Quizzes on readings (5% each)Quiz # 1 Why use systems thinking in health? Due 9/5Quiz # 2 Maternal Mortality/Opioid Epidemic Due 9/19Quiz # 3 Design Thinking Process Due 9/26Quiz # 4 Health Systems Lecture (Pakistan) Due 10/10Quiz # 5 Nutrition Lecture Due 10/17 | 25% |  |
| Assignments: |  |  |
| Design assignment #6: Detailed summaries of research: Write up detailed summaries of completed research interviews using Activity sheets A and B as a guide w/supporting Power Point Presentation of potential themes that emerged and ‘corners to leverage’ based on ‘key insights’. Include a mapping of the problem (tool of your choice) with ‘nodes’ or ‘categories’. Identify (circle or highlight) the ‘corner’ that you plan to leverage. (Complete and Report on Activity A and B from Design Toolkit—The template gives you the questions and a guide but your submission should not be a filled out chart but rather detailed write ups of your interviews which based on the assignment should include extreme view points representing opposite ends of the spectrum. E.g. active park volunteer, goes to the park each day to run to has never been to the park ) | 15% | Note this assignment is a cumulative one in which you should be conducting interviews over time.This assignment will also weigh considerably in to your experiential learning credit. Due: 11/7 |
|  |  |  |
| Define your ‘how might we’ solution (Design Activity #6) to the problem based on your design thinking approach and how it addresses the problem, why it is different, how you will prototype it. (Solution prototype) Complete in detail (not just fill out the charts) and Report Out on Activity C from Design Toolkit Idea/Solution/Intervention-Prototype Development. Draw on lecturer presentations on the Modhumita lecture; how might we engage marginal populations to access health services? | 10% | 11/14 |
| Define your experimental design (Design Activity #7) Write up your solution and how you plan to test it, what do you hope to learn, who are the potential partners and how might they be involved, what challenges do you anticipate, how you will explore this in a short term experiment (Activity D: Experiment Design-from Design Toolkit)? Draw on your lecturer’s presentation on the Loop Trail Quest (a prototype of a flip chart/a schematic of a game).  | 10% | 11/21 |
| The investor/funder pitch (Design Activity #8) Oral Power Point Group or Individual presentation of design thinking solution and the entire process (Step 5) | 5% | 11/21 and 12/5 |
| Polished design document that incorporates instructor and class feedback (Final Design Document #9) (comprising of all of the above elements as attachments) (Step 6) | 5 % | NOTE: Design documents that do not incorporate instructor and class feedback will receive a grade lower than the ‘draft’ submission.Due on Final Exam Day |
|  |  |  |
| Participation | 5 % | Students will be observed for engagement and participation in each class as well as be evaluated by peers in group work/ |

**Grading Scale:**
94-100%= A        63-67%=D
90- 93 %= A-       60-62%=D-
87- 89 %= B+      59% or below =      F
83- 86 %= B        Plagiarism=Potential F on assignment or course
80- 82 %= B-
78- 79 %= C+
73- 77 %= C
70- 72 %= C-
68- 69 %= D+

**Required course text/toolkit:**

**Design Thinking Tool Kit: (This is a simplified version of the Field Guide to Human Centered Design. You are also expected to consult with the Field Guide to help in completing the Process Activity Worksheets.)**

[**https://www.npca.org/resources/2746-design-thinking-process-for-innovation**](https://www.npca.org/resources/2746-design-thinking-process-for-innovation)

**Copy and paste link, download two files:**

**1) Design Thinking Tool Kit**

**2) Process Activity Worksheets A,B,C,D**

**Download a view accompanying video:**

[**https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular**](https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular)

**Download The Field Guide to Human Centered Design**

[**https://bestgraz.org/wp-content/uploads/2015/09/Field-Guide-to-Human-Centered-Design\_IDEOorg.pdf**](https://bestgraz.org/wp-content/uploads/2015/09/Field-Guide-to-Human-Centered-Design_IDEOorg.pdf)

**Class participation and related issues:**

* **Class participation:** The class meets only once a week for an hour and 15 minutes and attendance is required. If you must miss a class due to illness or excused family emergency you must notify the instructor BEFORE the class by email

During class, the instructor will engage the class in discussions on various issues and encourage varying viewpoints and perspectives. **Attendance alone does not comprise “participation”.** Students must actively engage in discussion/questions/and group work. If students feel uncomfortable speaking publicly either in large groups or small this is your opportunity to practice-- as good written and oral communication skills will be essential for any career advancement or employment. If you have public speaking anxieties, please seek services from the Counseling and Psychological Services (CAPS) (caps.gmu.edu/).

* **Cell phone/social media policy:**  Class only meets for one hour and 15 minutes once a week. **Disconnect and be present for this short time.** If the student expects/needs to respond to a family emergency or situation, he/she can excuse him/herself from class to respond. This policy is for professional courtesy and respect to the lecturer and fellow students.
* **Laptops:** You may use your laptop for in-class group activities. **You are encouraged to bring a journal or notebook with blank pages for drawing maps and diagrams.** Note-taking is encouraged to be done by hand in your dedicated notebook. All Power Points will be made available on BlackBoard after the lecture. Please read news article on research that validates the benefits of hand writing selective information rather than trying to write down lectures verbatim: <http://www.npr.org/2016/04/17/474525392/attention-students-put-your-laptops-away>

**Schedule**

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| --- | --- | --- | --- |
|  |  |  |  |
| **Day:** | **Topic:** | **In class activity and assignments:** | **Readings/viewings to be completed BEFORE class time:** |
|  | **Level 1** | **Systems-thinking to help unpack a health problem**  |  |
|  |  |  |  |
| 8/29 | In-person class meeting | Students share a problem or concern that they feel passionately about (it can be *anything*) and introduce themselves. It doesn’t have to be health, but others may help identify multiple interdependent factors by asking the student why the problem is a problem, and why, again, and again using the 5 Whys from the “Why is Jason in the Hospital” viewing.Explanation of the design of the course and expectations for the experiential design component of the class (this is a 4 credit class with 1 credit for experiential learning).  | *In class exercise based on viewing of: Why is Jason in the Hospital* <https://www.youtube.com/watch?v=DtU_W4FeTno>Optional: Play the Jeopardy Game about your instructor to understand who I am and why I emphasize real-world learning.Optional and recommended: Watch “The boy who harnessed the wind” on Netflix.PLEASE REVIEW SYLLABUS BEFORE CLASS AS WE WILL NOT HAVE TIME IN CLASS TO REVIEW. |
| 9/3 | On-line | **BlackBoard “open-book” quiz (#1) on reading: systems thinking theories, methods and tools (Due 9/5)** | Read: Peters, David (2014) The application of systems thinking in health: why use systems thinking? *Health Research Policy and Systems* <https://health-policy-systems.biomedcentral.com/track/pdf/10.1186/1478-4505-12-51> |
| 9/5 | Guest speaker (tentative)Anton Schneider, Senior Social Behavior Change Advisor, USAID*Failures in global health designs* | **Failures in global health design and why systems- thinking is needed.****Students will be asked to draw a journey map and pain points of the problem they identified last class.****If not, then presentation by your lecturer on a systems approach to HIV in Bangladesh through leveraging ‘the need for respect’ by marginalized populations** | Peters, David (2014) The application of systems thinking in health: why use systems thinking? *Health Research Policy and Systems* <https://health-policy-systems.biomedcentral.com/track/pdf/10.1186/1478-4505-12-51> |
| 9/10 | On-line | **Obesity reading** **Active reading homework: Based on the reading and viewing, ask yourself the question ‘how might we address the obesity epidemic in the US or globally. Start by listing the causes of obesity based on the two readings. You may want to do the 5 why’s exercise, or do an illustration like in the Ted Talk. This is not graded but essential for the in-class graded group work in Thursday’s class. Everyone will approach this differently. View the video “Got a wicked problem? First tell me how you make toast”.** | Video: Got a wicked problem? First tell me how you make toast, Ted Talk<https://www.youtube.com/watch?v=_vS_b7cJn2A>Obesity -**Obesity 1 of 2 articles****“Attacking the Obesity Epidemic by First Figuring Out it’s Cause”, Jane Brody, New York Times**[**https://www.nytimes.com/2011/09/13/health/13brody.html?searchResultPosition=2**](https://www.nytimes.com/2011/09/13/health/13brody.html?searchResultPosition=2)**Obesity 2 of 2 articles****“Does the world need a new buzz word-syndemic- to describe 3 big crises?” Rebecca Ellis, Jan 2019 NPR**[**https://www.npr.org/sections/goatsandsoda/2019/01/28/689292566/does-the-world-need-a-new-buzzword-syndemic-to-describe-3-big-crises**](https://www.npr.org/sections/goatsandsoda/2019/01/28/689292566/does-the-world-need-a-new-buzzword-syndemic-to-describe-3-big-crises)**Home task**: Active reading—note the causes of obesity; you may simply list them. Then ask why, but why, and why again at least 5 times. This will help at getting at root causes. |
| 9/12 | “Got a wicked problem? First tell me how you make toast”- Application of systems thinking to addressing obesity  | **Reflect and apply (in-class):** Brief lecture on systems and systems thinking**Active reading homework:** Based on the required readings and viewings come to class with a list of the factors, that *you* identified, are responsible for obesity and how might you begin to solve the problem of obesity.In class activity: how would you spend $10 million dollars.There is no right or wrong approach. This is an exercise to take a linear process (a list) and see how categories and nodes emerge in a non-linear way toward a common goal; later, you can use this process to focus and leverage one category or node for “high leverage” results in your own problem or challenge. | **In-class**: Work in teams of 2-3 write your items on sticky notes (to be provided). Organize your sticky notes/cards by themes on the wall or your desk. How many themes or buckets emerged? Now draw connections. Ask yourself is this a system? Do these pieces connect in some way? **Group Activity #1 Obesity:** Upload your diagram. EACH student must submit through the link, even if it is a duplicate of your teammates’. |
| 9/17 | On-line | **On-line open-note quiz #2 based on the four readings.** | **Explore & Discover:** Read/Listen to the ‘wicked’ problems below. Maternal Deaths -**Engage: Listen/Read****“Black Mothers Keep Dying After Giving Birth: Sharon Irving’s Story Explains Why”****National Public Radio**[**https://www.npr.org/2017/12/07/568948782/black-mothers-keep-dying-after-giving-birth-shalon-irvings-story-explains-why**](https://www.npr.org/2017/12/07/568948782/black-mothers-keep-dying-after-giving-birth-shalon-irvings-story-explains-why)**“CDC Says More Than Half of US Pregnancy Related Deaths are Preventable”**[**https://www.smithsonianmag.com/smart-news/cdc-says-more-half-us-pregnancy-related-deaths-are-preventable-180972140/**](https://www.smithsonianmag.com/smart-news/cdc-says-more-half-us-pregnancy-related-deaths-are-preventable-180972140/)Opioid Epidemic -**Opioid Epidemic: CDC Video Stories of Real People’s Addictions**[**https://www.cdc.gov/rxawareness/stories/index.html**](https://www.cdc.gov/rxawareness/stories/index.html)**“The Opioid Files” Washington Post, August 2019**[**https://www.washingtonpost.com/national/2019/07/20/opioid-files/**](https://www.washingtonpost.com/national/2019/07/20/opioid-files/) |
| 9/19 | Root Cause Analysis of ‘wicked’ problems of obesity, substance abuse, and maternal deaths in the US | **Lecture/exploration:** Ishikawa Diagrams and the 5 Whys applied to ‘wicked’ problems of obesity, substance abuse, and maternal mortality among black women in the US.**In class exercise and discussion:** Students will develop an Ishikawa fishbone diagram working in small groups and share/present their diagrams.Observers will actively participate by trying to identify a ‘corner’ at which a targeted solution may result in ‘high leverage’ results.  | **Group Activity #2 Wicked Problem “Fishbone” Diagram**. Working in a group of 2-3 develop an Ishikawa Diagram or (Fishbone) to diagram the cause and effect of *one* of the “wicked” problems detailed in your reading/viewing. This link, developed by Centers for Medicare and Medicaid, can provide guidance to how to develop a fishbone diagram. <https://www.cms.gov/medicare/provider-enrollment-and-certification/qapi/downloads/fishbonerevised.pdf>**Canva has templates that you can use. Search for ‘fishbone’ after creating an account.**[**https://www.canva.com/**](https://www.canva.com/) |
|  | **Level 2:** | **Applications of system thinking and design tools as a method to solve complex health problems** |  |
| 9/24 | On-line | **Quiz #3 on Readings and Video****Homework/Assignment Design Activity #3: based on the Design Thinking Tool Kit, and video, think of one or two ‘wicked’ problems (complex with multiple root causes) that you would like to use the Tool Kit and Design Thinking process to solve/address. These are your design challenges. Bring your design challenge statements to class. Diagram using the journey map to ‘walk’ the user through the process of using, doing, experiencing whatever your problem/challenge is (refer to the guest speakers grocery shopping exercise).** **Be sure to review the Design Thinking Tool Kit to be able to write your design challenge statement.**  | **Review material below before class:****A sample Tool Kit and resources are below to help you to 1) define your initial problem statement, 2) design research w/interview tips and 3) be able to synthesize and map your problem to identify ‘solutions’ 4) be able to ‘prototype’ your idea 5) be able to design an experiment to test the design.****Design Thinking Tool Kit:** [**https://www.npca.org/resources/2746-design-thinking-process-for-innovation**](https://www.npca.org/resources/2746-design-thinking-process-for-innovation)**Copy and paste link, download two files:** **1)Design Thinking Tool Kit** **2)Process Activity****Below is a video that is another resource:**[**https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular**](https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular)**Below is a very comprehensive resource that will help you in each phase of the design process.**[**https://bestgraz.org/wp-content/uploads/2015/09/Field-Guide-to-Human-Centered-Design\_IDEOorg.pdf**](https://bestgraz.org/wp-content/uploads/2015/09/Field-Guide-to-Human-Centered-Design_IDEOorg.pdf) |
| 9/26 | Design challenge example: getting urban populations to experience National Parks for health benefits | **Engage:** Apply tools to a complex health problem that you are working on in your job or have an academic or person interest.**Explore and Discover:** Sample Design Challenge Toolkit - Instructor review of Tool Kit and Process Activity Worksheets that you will also use as templates for your design challenge. **Brief Presentation** of instructor’s approach to identify ideas to engage urban youth in National Parks.**Share Potential’ Challenges and form teams:** In class – you may work in pairs or a team of no more than three people. Synthesize and consolidate your challenges/ideas.1. Share your design challenge (problem statement)
2. Form groups of between 2 and 3 based on common interests in tackling a similar problem
 | **Group Activity #3: by the next class, construct a design challenge based on your group’s common interests/concerns. Use peer-reviewed journals and authoritative data sources to explain this problem and the multiple causes (due 10/3)** |
| 10/1 | On-line | **On-line** | **Research:** your problem statement or challenge and ensure that you have data to support why your problem is a problem. Work with your group. Assign team members ‘corners’ of the problem to research.**Read:** WHO Health System FrameworkGAVI Alliance, Project Fact Sheet, What are the health system building blocks? [**https://hssfactsheets.weebly.com/uploads/4/8/1/1/48110245/gavi\_cso\_fact\_sheet\_no\_5\_building\_blocks.pdf**](https://hssfactsheets.weebly.com/uploads/4/8/1/1/48110245/gavi_cso_fact_sheet_no_5_building_blocks.pdf) |
| 10/3 | The missing link in the WHO health system framework: people | **Engage:** Presentation on a Systems Thinking Approach to Strengthening Health Systems After a Natural Disaster in Pakistan with an example of a clear definition of a design challenge with data**Reflection & Feedback:** Identify problems that can be supported by data (per the presentation); Observe and document the problem. Use the fishbone diagram to help you frame the problems.Large group interaction/feedback. | **Due: Shared Design Problem Group Activity #3 with supporting data. Use fishbone or journey map to diagram your problem. Or both. Each member submits and should reflect group work. Not just filling in sections on Google Docs. Talk, share, argue, collaborate!** |
| 10/8 | On-line | **Open-book Quiz #4 on Pakistan lecture****Review next step in the design challenge: identify where and how you will immerse yourself to understand the problem and to uncover different levels of the problem from a human-centered design perspective.****See Toolkit: Immerse, Observe & Inquire, Look In, Find Analogous Inspiration****Refer to the The Field Guide to Human Centered Design** | Review the Power Point from the lecture on Health Systems Strengthening in PakistanStart connecting with your team to plan out the rest of the semester! |
| 10/10 | Nutrition/Agriculture and the Missing Link: Men | Nutrition, Agriculture, and Household Decision-making: Men the missing link asidentified through ‘insight mining’.Design Mapping #5: Begin working in teams or individually, mapout your research strategy/approach. Brainstorm who you need to interview; what you need to observe, etc. Refer to the Toolkit: Immerse, Observe & Inquire, Look In, Find Analogous Inspiration**Refer to the The Field Guide to Human Centered Design** |  |
|  |  |  |  |
| 10/15 | Field Work | Open-book quiz #5 on Nutrition lecture Conduct interviews/observations.**Refer to the The Field Guide to Human Centered Design** |  |
| 10/17 | Links between environment and health | In class active listening fishbone exercise based on short lecture/presentation.Short lecture/presentation (work in progress) of instructor’s academic research on human disturbances in nature and emergence of zoonotic diseases—identifying the ‘corner at which to leverage a wicked problem’.Example of who I interviewed; and theVariety of interviewees that may haveDiffering perspectives. | **Work in small groups on your design challenge. Report on progress.** |
| 10/22 | Field Work | Continue to conduct interviews |  |
| 10/24 | Uncovering key themes/insights—More Examples of Uncovering ‘Corners to leverage’ | Guyana HIV Risk Reduction case study – Redefining gender norms through mass media in Guyana, South AmericaExample of: 1) how we synthesized and mapped the causal web of the problem (gender norms) 2) framed the problem in a new way as a result of the systems thinking design approach (redefined what it means to be ‘macho’ ) 3) identified a new or different way of approaching the problem or leveraged key insights based on our systems thinking approach (mass media commercials targeting girls and boys)  | **Work in small groups on your design challenge. Report on progress.** |
| 10/29 | Field Work | **Continue to conduct interviews** |  |
| 10/31 | No class | **NO CLASS Continue to conduct interviews** |  |
| 11/5 | Field Work | **Continue to conduct interview** |  |
| 11/7 | Presentation of completed worksheets A and B | Group and individual presentations of summaries/highlights of research interviews w/supporting Power Point Presentation of potential ‘corners to leverage’ based on ‘key insights’. Include a mapping of the problem (tool of your choice) with ‘nodes’ or ‘categories’. Identify (circle or highlight) the ‘corner’ that you plan to leverage. (Presentation of completed worksheets from Activity A and B**Develop a fishbone diagram as students present**Assignment DUE: Each student in a group must Upload Oral Presentation of Research on BlackBoard even if done in a group | **No readings, except to be sure that you have read the Design Toolkit, the attachments and the video in preparing your Oral Presentation.** |
| 11/12 | Field Work | Work individually or in groups to prepare for your Oral Presentation of your solutionthat follows Activity C Worksheet. |  |
| 11/14 | How might we? | **Due Before Class: Activity C Worksheet**Group and individual oral presentations of ‘how might we’ solution/s to the problem based on your design thinking approach and how it addresses the problem, why it is different, how you will prototype it. (Solution prototype) (Complete and Report Out on Activity C Idea/Solution/Intervention-Prototype Development)Lecturer presentation of simulated game, ‘Game of Choice” to help girls in India make informed choices. | **Discover and Explore** - Watch: The Girl Effect Video “The Clock is Ticking”<https://www.youtube.com/watch?v=1e8xgF0JtVg> |
| 11/19 | On line | Work on your solution |  |
| 11/21 | Case study: architectural prototype of drop in centers with pilot plan to develop and roll out | Case study: Modhumita: Reaching Marginalized Populations “under the radar”Example of solution and how we planned to test it, what we hoped to learn, who are the potential partners and how might they be involved, what challenges do you anticipate, how you will explore this in a short term experiment . | **In –class group work to finalize presentations.****Due: Before Class Design Challenge Experimental Design Activity D (use worksheets to guide preparation)**Write up your solution and how you plan to test it, what do you hope to learn, who are the potential partners and how might they be involve, what challenges do you anticipate, how you will explore this in a short term experiment (Activity D: Experiment Design)3 -4 Volunteers to present final prototype |
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|  | **Level 3:** | **Mastering Your Own Design Challenges** |  |
| 11/26 | On-line | Finalize Design Challenge Submission |  |
|  |  | Thanksgiving |  |
| 12/5 | Design Idea Presentations | Group Oral Presentations (3-4 groups)  | **6-8 minute presentation per group w/class feedback** |
|  |  |  |  |
|  | **Level 4:** | **Mastering design**  |  |
| TBDDue on Final Exam Date |  | Final Design Challenge Document DUE (incorporating instructor and classmate feedback) | **Final Design Document w/attached worksheets and powerpoint** |