

Problem Solving Initiative: Opportunity, Mobility, Access: Transportation Alternatives in Michigan: WINTER 2021 PROBLEM SOLVING INITIATIVE

Wednesdays, 3:15-6:30 pm

Class will be remote and held via Zoom meeting. Please register at this link.

https://umich.zoom.us/meeting/register/tJModOCtpzwtG9ZL_ycfj5x6-P9PNItOe1rr

Link is also available through the Canvas site for the course.

After registering, you will receive a confirmation email containing information about joining the meeting. Once registered you will use the provided zoom link for each class meeting except for the Problem solving modules held weeks 2-4 of the winter semester taught by Bridgette Carr and Ann Verhey-Henke.

Professors:

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Required Course Materials:

All materials will either be distributed electronically in class or posted on Canvas throughout the semester.

Our course brief: Our infrastructure is crumbling, with our most vulnerable suffering disproportionately. Infrastructure, defined as “the basic physical and organizational structures and facilities needed for the operation of a society or enterprise” needs rethinking. Aging and waning public infrastructures are increasingly shifting responsibilities and burdens from collectives to individuals and from public to private sectors. This, in turn, affects access to opportunity, health outcomes, and family stability.

Our focus will be the proposed mobility corridor linking Detroit, Ann Arbor, and Dearborn. Teams composed of students from architecture and urban planning, law, public health, information, business, public policy, and other disciplines will learn from stakeholders and experts, apply problem solving tools, study funding challenges and opportunities, and learn about changing mobility and transport infrastructures. Funding, policy, and programming mechanisms for repair, maintenance, access and innovation in mobility systems will be explored with a specific focus on lower-income communities in Southeast Michigan, as students craft innovative solutions to these challenges.

Course Objectives:

By the completion of this course, students will be able to:

1. Articulate the role of their discipline in addressing the issues of transportation equity.
2. Define and understand the problem of transportation equity vis a vis new mobility initiatives.
3. Describe methods to communicate across disciplines and with key stakeholders to discuss ways to improve transportation equity for new mobility initiatives.
4. Develop the skills to work collaboratively to create innovative professional perspectives and practices that assist with new methods for access, equity and mobility.
5. Integrate strategies, tactics, and goals into their professional practice in order to identify and solve problems.
6. Reflect on the systemic factors that perpetuate and make it difficult to create equitable, inclusive mobility and opportunity.
7. Learn and reflect on their relevant professional ethical responsibilities and current practices.

Office Hours:

Professor Thompson holds office hours by appointment. You may contact her at drthomp@umich.edu to make an appointment. Professor Norman holds office hours on Tuesdays between 1:30 and 3:30pm. Use this link to request an appointment. <https://officehours.it.umich.edu/queue/653>.

Participation and Attendance:

Class participation is an essential part of the course, we will spend time in class applying the concepts and research ideas you have gathered. Class attendance and participation is mandatory. If you are unable to make a class, please email us in advance.

With COVID-19 still raging, we recognize that one of us may become ill, may need to take care of someone who is ill, or be emotionally affected because of the effect of this pandemic on their loved ones. With our class being conducted online, we also anticipate that some of you will sometimes have technical difficulties with your equipment or internet connectivity. For all of these reasons, this semester, more than ever, it is important that you keep the lines of communication open with us about your circumstances, whatever they are, so that we can (a) help you as best we can, and (b) prepare accordingly so our class sessions can run smoothly. This course is meant to challenge and motivate you, not to stress you out or add too much to your plate during times of intense emotional strain. If you are facing difficult circumstances, please tell us.

Learning Goals:

In this course you will be evaluated on both an individual and group level. This course is primarily focused on skills building in the context of problem solving such as:

- Collaborating
- Communicating across disciplines
- Communicating ideas to key stakeholders
- Reflecting
- Embracing acceptable risk
- Innovating

- Developing prototypes and failing fast
- Integrating strategies, tactics, and goals
- Articulating your discipline's contribution to the issue we are working on
- Tolerating ambiguity
- Defining and understanding the problem
- Developing professional perspectives
- Understanding relevant ethical standards and dynamics

Team Topics: Students will be placed in teams that will take on specific aspects of mobility and access. Teams will work internally, but will make interim presentations to the entire class around the midpoint of the semester and ultimately coordinate a combined, coherent document that deals with their particular issue area, but also weaves in the history and legacy of their issue area to ground the project (urban renewal, segregation, wealth gaps, unequal access, defunding, previous efforts, etc.).

Team 1 - Mitigating effects on issues beyond transport (jobs housing balance, changing workplace, on-line, work from home effects, unequal access, inequality, etc..)

Team 2 - Financial / Funding Solutions (sources of funds, funding formulas, alternative sources, taxing and pricing regimes)

Team 3 - Policy and Regulatory Solutions (burden shifting, public private partnerships, carrots and sticks, creation of new agencies, reimagining of current agencies)

Team 4 - Design and Operational Solutions (complete streets, demand or supply based solutions, smart cities, algorithms, automation, design best practices, retrofits, reimagining)

All proposals would incorporate Future Proofing Solutions (long term feasibility) - operational funding, changing habits and technologies, and shifts in culture or sectors.

This course requires significant participation and preparation. You will be working with your colleagues in the course to create an innovative intervention to address the identified problem. Your work will be evaluated by both faculty members, as well as each other.

In any course in which group work is an integral component of the course, students may have concerns about workload distribution within the group. We are hopeful in light of the real world applications of our work in this course, that "free riders" will not be an issue. However, peer assessment will be part of the evaluation of the course. Each student will complete a self and peer assessment form at both the midpoint of the semester and at the end. The assessment forms may be found on Canvas.

Creating Community: We wish to create a community that is welcoming and inclusive of the multitude of lived experiences and perspectives we each bring; one that engenders trust, openness, honesty, vulnerability, humility and compassion; that allows us to challenge ourselves and each other and to

make and recover from mistakes. How we get there requires “a commitment to ‘will’ and ‘skill’ by participants.”[1] We ask you to consistently bring the *will*, and we will help facilitate your learning and practice of the *skills* necessary for effective engagement and conversation.

In our first class, we will generate a list of norms together—our *community agreement*—for our expectations of ourselves and each other during our time together in the PSI. The agreement will be a living document that we will revisit and add to from time to time.

[1] Kenneth V. Hardy, PhD, Mastering Context Talk, Practical skills for effective engagement,” 136 (2016).

Professional Norms and Self-Disclosure

What we will discuss in class may involve controversies. It is customary in professional contexts to be respectful to everyone’s thoughts and opinions. While critical dialogue is expected, degrading and disrespectful comments will not be tolerated. Additionally, it is customary in professional contexts not to disclose personal information about one’s own history. Self-disclosure can create an environment where group members (including the disclosure) may feel uncomfortable. Another rationale for this norm is that professionals at work (or students in a class) are not free to leave if such disclosures are triggering, as they would be free to leave in the context of a personal conversation. Finally, it is a common ethical standard that professionals must create personal boundaries to protect themselves and clients, which often involves withholding our personal experiences and beliefs from professional relationships. Therefore, we ask that you respect the norm of not sharing personal experiences that may be difficult or controversial.

Confidential Resources on Campus:

You may share information in a confidential environment at the following places on campus:

Counseling and Psychological Services (CAPS): <http://caps.umich.edu/>

Sexual Assault Prevention and Awareness Center (SAPAC): <http://sapac.umich.edu/>

Office of the Ombuds: <http://ombuds.umich.edu/>

You may also reach a SAPAC advocate 24/7 through the Crisis Line at (734) 936-3333.

Mental Health and Wellbeing:

The University of Michigan is committed to advancing the mental health and wellbeing of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact **Counseling and Psychological Services (CAPS)** at (734) 764-8312 and <https://caps.umich.edu/> during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. For a listing of other mental health resources available on and off campus, visit: <http://umich.edu/~mhealth/>.

Disability Statement:

The University of Michigan is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Services for Students with Disabilities (SSD) Office located at G 664 Haven Hall. The SSD

phone number is 734-763-3000. (For law students, once your eligibility for an accommodation has been determined, SSD will contact the Law School's Office of Student Life [734-764-0516, lawstudentlife@umich.edu] with a recommendation, and Student Life will work with you and SSD to finalize and facilitate your accommodations. For more information about this process, please feel welcome to contact the Office of Student Life.)

Evaluation and Assessment:

Students will be assigned to group project teams during the course. Student grades will be determined by the quality of team work product, group processes (e.g., ability to meet deadlines, ability to communicate effectively), and individual performance.

The substantive criteria we will use for evaluation fall into five major categories with the weights described below. (Note that unanticipated course developments may require some modification in category weighting at the end of the term). An additional sixth category is available to recognize exceptional efforts and contributions.

As part of this course you will engage in specific problem-solving content with Bridgette Carr and Ann Verhey-Henke. Your grade in the problem-solving portion of the course will contribute 33% toward the final course grade. The balance of your grade will be calculated as follows:

1. Team Deliverables and Contribution to Overall Class Plan or Strategy (40%)

Questions to Consider: Did the team's work product demonstrate excellent judgment and superior research, analysis, critical thinking, and problem solving skills? Did the team express its thoughts in an organized manner? Did the team's written and oral work product employ proper grammar, sentence structure, and vocabulary? Did the team's work respond effectively to potential challenges and positions expressed by others? Did the team contribute significantly to the success of the overall class plan or strategy?

2. Team Functioning (10%)

Questions to Consider: Did the team display cooperation and effective communication? Did the team function effectively and utilize the skills and knowledge of all team members? Did the team consult with the professors and other knowledgeable experts appropriately? Did the team meet established deadlines?

3. Individual Effort and Interaction with Group (20%)

For this subset of the overall grade there are some questions you should consider: Did you attend group meetings regularly and arrive on time? Did you contribute meaningfully to group discussions? Were you open to, and respectful of, other points of view? Did you complete group assignments on time? Was the work you prepared for the team high quality? Did you demonstrate a cooperative and supportive attitude? Did you contribute significantly to the success of the project? *Note: The answers to these questions will be determined, in large part, by self and peer evaluation.*

4. Individual Participation and Professional Relationships/Responsibilities (20%)

Questions to consider: Did you participate regularly in class discussions? Were you prepared to discuss developments in your projects in an effective manner with other students? Did you respond courteously and with due consideration to professors, guest speakers, consultants, and classmates? Did you strive for cross-disciplinary cultural competence (i.e., an appreciation for the language, norms, perspectives, and practices of other disciplines) and understanding of other differences among your classmates? Did you display honesty and integrity?

5. Individual Reflective Learning (10%)

Questions to consider: Can you effectively criticize your own performance? Are you able to identify your strengths and weaknesses in the various areas of project work and problem solving? Did you gain insights about your future role as a professional? Did you learn about the value and limitations of professionals in addressing societal challenges? Did you do all you could have done to maximize the benefits you obtained from the problem solving course experience?

6. Individual Special Recognition

Question to consider: Are there any aspects of your work in the course that are not otherwise described in the preceding criteria that deserve special recognition?

Grade Assessment Descriptions

The following is a rough guide describing the level of work that corresponds to student grades. The descriptions are necessarily general, but we hope it helps you to understand our grading.

A	Consistently excellent work in all areas, with at least one outstanding piece of significant work. A student who earns an “A” will take full ownership of the project, be organized and attentive to details, will always allocate sufficient time and effort to carry out tasks responsibly, and will recognize, consider, and appropriately resolve ethical issues. The student will show initiative and creativity in planning and developing solutions, rather than merely carrying out plans outlined by the professor, and will be reflective, professional, and respectful. S/he will have shown considerable progress in mastering the various skills necessary to be an effective problem solver, and will actively prepare, participate, and take initiative in all class sessions and team sessions.
A-	Mostly excellent work in all areas and some very good work.
B+	Consistently very good work or a mix of generally very good work, occasional excellent work, and some competent work.
B	Competent and adequate work with some very good work, but with some weaknesses.

B-	On the whole, competent work but with some significant lapses or shortcomings.
C	On the whole, marginally competent work with frequent lapses or shortcomings.
C- or below	Serious difficulties with performance; failing to meet responsibilities.

Students enrolled in and registered through schools or colleges that permit pass/fail grading may opt for pass/fail grading in this course. Students who choose the pass/fail option will receive a grade of "pass" if they meet the conditions set forth by their schools or colleges for such grade.

Feedback: We want to make sure this is the best learning experience possible for each of you and will work hard to improve each week. To help with that, there is a link to a feedback form on Canvas where you can leave anonymous feedback anytime you want. Let's not wait until the midterm eval to fix what isn't working.

Course Schedule: (Adjustments will be made to the syllabus as the semester progresses.)

Class 1, January 20 – INTRODUCTION TO THE COURSE AND DISCUSSION OF PRE-READINGS

- Introduce ourselves and class plan – syllabus review
- Setting the context, history, current issues, organizations and policy frameworks
- Icebreaker Exercise
- Laying out a trajectory and strategy for the topic and assignments for the course
- **Readings:**
 - Pre-Read before the first class meeting: [Connected and Automated Vehicle Corridor Concept](#)
 - Pre-Read - [Roads to Nowhere: How Infrastructure Built on American Inequality](#)
 - Pre-Read - A concise history of Detroit public transit
<https://detroit.curbed.com/2017/9/22/16322202/detroit-transit-history>
 - Pre-Read - How Did We Get Here? A Visual Timeline of Mass Transit in Southeast Michigan
<https://wdet.org/posts/2018/05/24/86823-how-did-we-get-here-a-visual-timeline-of-mass-transit-in-southeast-michigan/>

Problem Solving Bootcamp weeks 2-4 will be taught by Bridgette Carr and Ann Verhey-Henke

Class 2, January 27 – Problem Solving Bootcamp

- We will be using an online tool called MURAL for the entire semester, it allows us to do collaborative problem solving virtually. In order to be ready to go for class this week please complete this 1 Hour MURAL training before class this week.

- Please read the Interviewing for Insights PDF slides.
- Please come up with 3-5 questions in each of the following categories to ask your faculty members to learn more about your problem statement.
 - Descriptive (Broad, Open, Evokes Storytelling)
 - Structural (Specific, In-depth, Use to Categorize)
 - Contrast (Clarity, Understand Relationships, Understand How Terms Are Used)

During class you will need to transfer these questions to your MURAL board so please have them typed up and accessible for class.

Class 3, February 3 – Problem Solving Bootcamp

- During our class last week we asked your group to identify some questions to use when interviewing your faculty members. Each individual in your group should answer those same questions for themselves and post their answers in your Group Workspace. All of you bring expertise, information, and assumptions about the problem you are trying to solve-- -- it is important for us to document those at the beginning of the process!
- Please watch the recording Ann made to walk you and your group through making an Ecosystem Map. After watching please complete the first version of your Ecosystem Map on MURAL.
- Complete the social identity wheel and watch and complete the exercises (including the wheel) in the Community Engagement: Collaborating for Change MOOC
- The link to the MOOC is at the bottom of the Community Engagement page ("Access the MOOC"). Note: the social identity wheel that you complete is for your own reflection -- you will not be submitting it for class.
- You only need to watch and complete a portion of Module 2, Section 1 (you can stop at the section titled "Dimensions of Social Identities Continued")

Class 4, February 10 – Problem Solving Bootcamp

Working with your group please identify the How Might We statement you want to use for Ideation. Put your chosen statement through the faucet. We will use your How Might We statement as the foundation for our last class together.

Class 5, February 17

Guests: TBD

- Readings:
 - TBD

Class 6, February 24

Guests: TBD

- Readings:
 - TBD

Class 7, March 3 – Midterm Presentations

Class 8, March 10

*Midterm self and peer evaluation due by **March 10th @ 11:59pm.***

Guests: TBD

- **Readings:**
 - TBD

Class 9, March 17

Guests: TBD

- **Readings:**
 - TBD

Class 10, March 24

Guests: TBD

- **Readings:**
 - TBD

Class 11, March 31

Guests: TBD

- **Readings:**
 - TBD

Class 12, April 7

Guests: TBD

- **Readings:**
 - TBD

Class 13, April 14

Final Presentations - Capstone week!

Deadlines for completing your Process Maps:

March 11: We will be reviewing two sections of your map on March 11. Please make sure you have completed the Ecosystem/Stakeholder Mapping and Interview Synthesis sections. You should undertake a new Ecosystem Map and not copy/paste the one you did in the bootcamp. We will be providing you with feedback on those sections the following week. We understand you may not have completed all of your interviews by March 11 however your map should reflect the interviews completed so far.

April 1: We will review two additional sections of your map on April 1. Please make sure you have completed the Ideate and Prototype sections of your map. We know you may not have all your feedback collected by this point, please just highlight whatever feedback you do have. We will provide you with feedback on those sections the following week.

April 22: We will be reviewing your entire process map. We expect all sections to be completed. (the storyboarding section is not required, it is optional. Some students last semester found it helpful as they prepared for their capstones).