Inquiry, Design, and Ethical Action (IDEA) Experiences	Formative	Summative
IDEA 1: Develop Inquiry and Scientific Process Skills Develop Scientific Process Skills that will guide your learning during this collective experience. Consider how inquiry, critical friend protocols, and argumentation will strengthen your discourse, understanding multiple perspectives and your decision-making skills. [Foundational, Meta-Knowledge]	Create protocols for utilizing inquiry and scientific process skills when engaging in the design thinking experiences.	Evaluate the utilization of inquiry and scientific process skill protocols during a scaffolded design thinking experience.
IDEA 2: Reflect Reflect on how you are situated. Consider your background, identity, gender, sources of support, spheres of influence, aspirations, family's possessions/wealth, and so forth. [Humanistic, Meta Knowledge}	Develop an initial personal statement Ask questions to identify blind spots in positionality	Identify shifts in their personal statement: how did you change from this experience?
IDEA 3: Contextualize Contextualize STEM design challenges/social issues within a broader context or community. Consider the larger historical, scientific, and socio-cultural intersections and boundaries. [Foundational, Humanistic, Meta Knowledge]	Engage in philosophical debate situated in scientific and socio-cultural issues/problems. Positions and topics are assigned.	Using topics and positionalities *chosen by participants*, scholars engage in philosophical debate situated in socio-cultural, and scientific issues/problems. Ultimately, a consensus will need to be reached that focuses on compromise.
IDEA 4: Democratize Democratize solutions to community needs. Consider the ways communities are organized, funded, and represented. Recognize that community members must be involved leaders in efforts to solve problems. Who makes decisions about the community? Who should be involved in the change? What space should you as a "designer" hold? [Foundational, Humanistic, Meta Knowledge]	Participate in a guided Investigation of a "community" (e.g., communities in geographical locations with landfills, and fewer grocery stores, global warming) Create Action Plan	Investigate a community of your choosing (your own or one you're interested in). What question(s) are you attempting to answer? What did you find? Design an action plan to mediate the issue.
IDEA 5: Empathize Empathize with those impacted by your design or innovation by cultivating a mindset of curiosity and enacting active listening skills to understand other perspectives instead of judging other perspectives. Consider how empathy-based data collection including observations, interviews, interactions, and potentially immersing yourself in the communities impacted by the issues helps you to understand the problem from the future-user perspectives. [Humanistic Knowledge]	Design interviews and data gathering plans to gain insights about a particular issue.	Design and engage in an interview with community members to ascertain multiperspectival views on current issues the community is facing.
IDEA Capstone Scholars will immerse themselves in the design-thinking process (define, ideate, prototype, test) to solve a complex problem/issue/need facing a community. [Foundational, Meta, Humanistic Knowledge]	Interpret community-based data individually and collectively.	Engage in design-thinking process to a complex problem/issue/need facing a underserved community

(Davis, Craig, Norton, and Raven, 2020)