

Design Thinking to Solve Problems - Capstone

****Please note that this syllabus is specific to the University of Alabama at Birmingham (UAB) and therefore contains specific language and sections required by UAB policy.***

Course Description:

Capstone includes application of the basic tools of inquiry into social problems; basic ethical issues in contemporary science; analyzing the problem; analyzing any relevant policies; data validity and reliability; data gathering techniques; data management; solution(s) generation; disciplinary standards for writing the proposal and reporting findings. Over the course of the semester, students will be exposed to different sectors that overlap science and society (public, private, non-profit).

Course Objective:

The Design Thinking to Solve Problems Capstone provides students with the opportunity to engage in a shared capstone experience. Students matriculating through the Scientific Solutions for Society Certificate program come from diverse backgrounds, have taken an assortment of different courses, and bring varying experiences and expertise. For all the different paths the student has taken, they lead to the Design Thinking to Solve Problems Capstone and the culmination of completing their certificate in Scientific Solutions for Society (SS4S). The Capstone course is designed to usher each student into the post-degree workforce with a broad skill set for careers in science policy, government, non-profit sector, entrepreneurship, the public sector, or academia.

Students will:

- 1) Use interdisciplinary approaches to bridge their academic education to their post-academic life. What do I know? What can I do? How do I get to where I want to go?
- 2) Use critical thinking skills to conduct hands-on community based research that focuses on identifying a societal problem, analyzing relevant policies/technologies, and proposing solutions.
- 3) Collaborate on an original research project that will be informative to a local sector (government, public, non-profit, private).
- 4) Communicate findings to the relevant sector (Mayor's Office, Business Bureau, Literacy Council, etc.)

******Over the course of the semester, students will develop two portfolios: 1) Needs Assessment, and 2) Professional Planning Portfolio.

Prerequisites: For students how have successfully completed **5 courses** in the Scientific Solutions for Society (SS4S) certificate program

Course Projects

- **Needs Assessment** (group project): I will be asking you to create a needs assessment integrating the materials and knowledge from prior classes, independent research, as well as, creating new knowledge specifically for your project. Each project will identify a

societal problem or technological need, analyze the current state, and propose a solution (or multiple solutions). Completing this project will require knowledge and skill developed in trainees' foundational expertise area as well as courses from the SS4S program. The needs assessment counts for 300 pts of your final grade. The needs assessment will be completed in stages (100pts), culminating in a) final needs assessment paper (100 pts), and b) a 15 min assessment presentation to a relevant review committee (100 pts).

- Several outside entities will task groups with several possible needs assessment requests. Examples: The City of Birmingham Mayor's office, Better Business Alliance, City Council offices, University Senate committees, etc.
- 15 minute presentations will be given to respective and relevant review committees who will be tasked with evaluating the validity of the proposed solution(s).
- **Professional Planning Portfolio** (individual project): As you prepare to graduate and enter the workforce, I want you to think about how your graduate program and this certificate program have prepared you for your next step in your life course.
 - Core Section (100 pts) - will contain the following (but not limited to) documents:
 - i. A career goal statement
 - ii. An academic performance audit
 - iii. A current, accurate, and professional appearing resume/curriculum vitae
 - Employment Section (100 pts) - will contain the following documents:
 - i. Job search strategy
 - ii. A professional-appearing cover letter
 - iii. Completed letter of recommendation request forms
 - iv. Complete applications for at least three jobs (do not have to be turned in)

Required Text/Reading Material

All readings will be posted on the course Canvas page ([link here](#)).

Course Policies

Attendance Policy: 50 pts of your final grade will be based on attendance (attendance app in Canvas). Attendance is highly recommended; attendance will be taken daily. While I understand that sometimes coming late to class is unavoidable, do not make this a habit, as it is disrespectful to me and the class (being late will harm your grade by 10%).

Discussion/Participation Policy: 100 pts will be based on the quality of your participation in daily discussions. It is important that students come to class prepared to discuss the day's material. Having read the material before class enhances and encourages class discussion. Your class participation will be graded weekly by the instructor, and weekly feedback will be provided. Students will be required to participate weekly.

Grading:

Letter Grade	Qualitative Interpretation	Percent Grade
A	Excellent	89.5% - 100%
B	Good	79.5% - 89.4%

C	Fair	69.5% - 79.4%
D	Passing	59.5% - 69.4%
F	Failure	0% - 59.4%

Make-up Policy: If you must miss a commentary, discussion, or assignment, you will need to schedule a time to make-up the assignment before your absence. Only in extreme cases will this policy be modified. REMEMBER, not all components are used to calculate final grades, so you may not need a make-up.

Communications: Per UAB policy, all official correspondence will be sent ONLY to the @uab.edu address. All students are responsible for ensuring that the correct e-mail address is listed in Canvas by the beginning of Week 1. UAB E-mail is the only method I will use to electronically communicate with students. It is your responsibility to make sure a valid email UAB address is provided. Failure on your part to do so can result in you missing important information that could affect your grade.

Drop/Add: Per UAB policy [insert semester relevant date] is the last day to add/drop this course. The last day to withdraw from this course with a grade of “W” is [insert date]. Students registering late will be required to make up all missed class material.

Accommodations of Religious Beliefs: Religious beliefs shall be reasonably accommodated with respect to all examinations and other academic requirements. Please notify the professor in advance if there is a conflict.

DSS Accessibility Statement: UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff. If you are registered with Disability Support Services, please contact DSS to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call 934-4205 or visit <http://www.uab.edu/dss> or Hill Student Center Suite 409.

Title IX Statement: The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct, we encourage you to report the incident. UAB provides several avenues for reporting. For more information about Title IX, policy, reporting, protections, resources and supports, please visit <http://www.uab.edu/titleix> for UAB’s Title IX Policy, UAB’s Equal Opportunity, Anti-Harassment Policy and Duty to Report and Non-Retaliation Policy.

Academic Honesty Policy: UAB Faculty expects all members of its academic community to function per the highest ethical and professional standards. Academic dishonesty and misconduct includes, but is not limited to, acts of abetting, cheating, plagiarism, fabrication, and misrepresentation. Candidates are expected to honor the UAB Academic Honor Code. Please consult this resource for additional information regarding the specific procedures to be undertaken when a student violates the UAB Student Conduct Code.

<http://catalog.uab.edu/student-handbook/studentconductcode/>

Let me make it clear: if you cheat or plagiarize you will fail the course and your name will be forwarded to the University Compliance Office.

Class Etiquette: Respect fellow students and myself. Topics in this class can become sensitive and someone (including myself) may say something with which you disagree. Critical discussion is encouraged, but a respect for differences in theoretical perspective is required.

Reservation: I reserve the right to make changes in this syllabus to better serve the class's needs. Any changes will be announced in class in advance.