

## DCP 4290 | 6 Credits

# Capstone In Sustainability and the Built Environment

### | Fall | Spring | Summer

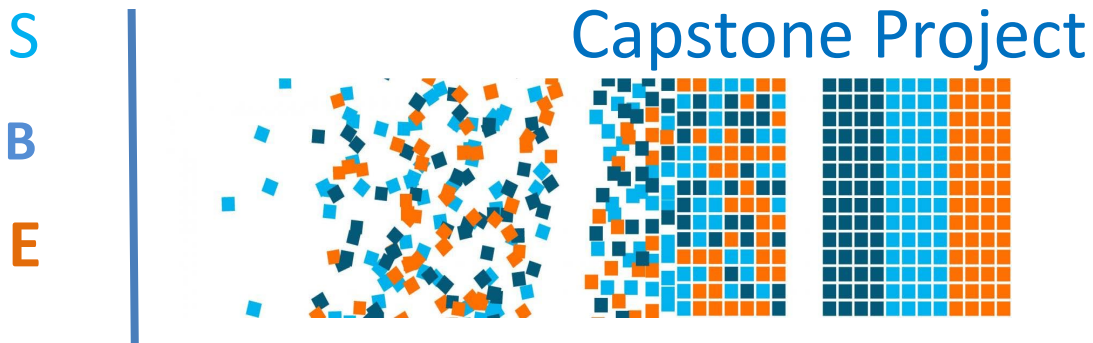
<b>Course Coordinator:</b>	Bahar Armaghani   LEED Fellow   WELL Faculty Director & Instructional Associate Professor   Program in Sustainability and the Built Environment (SBE) College of Design, Construction, and Planning (DCP)   University of Florida
<b>Office Correspondence:</b>	352.294.1428   Canvas email (preferred)   <a href="mailto:barmagh@ufl.edu">barmagh@ufl.edu</a> (alternative)
<b>Office hours:</b>	Tuesdays   8:30-10:30 am   Thursdays   8:30-10:30 am   Or By appointment via Zoom Rinker Hall, Room 322, if you are on campus
<b>Pre-requisites</b>	DCP 4942, Field Experience in Sustainability and the Built Environment (or) Approved DCP studio course with a sustainability emphasis
<b>Required Pre-Requisite</b>	DCP 3200, Method of Inquiry with completed SBE Senior Capstone <a href="#">registration form</a> co-signed by the student and their mentor
<b>Course Website:</b>	<a href="https://ufl.instructure.com/courses/508165">https://ufl.instructure.com/courses/508165</a> for announcements, assignments, and course deliverables

## ABOUT THE COURSE

The Sustainability and the Built Environment (SBE) Program views the mentored Capstone Project as the most effective way to bring out the passion and innovation in our students on their preferred topic using the tools, skills and knowledge earned throughout their college career at SBE.

The capstone project is a celebration of sorts and culminating experiences to deliver a polished product that showcases students' abilities and readiness for the job market.

Students are strongly encouraged to identify a project and a mentor at the end of their Method of Inquiry course that is a pre-requisite for the capstone, or at least two weeks before the start of the semester in which they will enroll in the Capstone course.



## COURSE OVERVIEW

Each student will undertake an individual project under the direction of a faculty member or an industry expert in their topic with a co-mentoring with the Director of the SBE, with a focus on comprehensive solutions to a problem in sustainability based on research. This final semester-long project allows students

to explore specific areas of personal interest, to hone problem-solving abilities, to enhance their ability to do research and to improve independent decision making and organizational skills.

The SBE program has created a list of top faculty and industry mentors available to work with SBE students to make the students final project an experience to last a lifetime. Each student is matched with the appropriate mentor based on the project topic and the mentor's field of expertise.

## **COURSE GOALS & OBJECTIVES**

### **Course Goals**

- Learn and apply the elements of thought from the wheel of reason to evaluate claims within your field of interest;
- Utilize critical thinking strategies and research design methods to examine ongoing issues in sustainability and the built environment;
- Evaluate and develop personal philosophies of science;
- Apply what learned in the Method of Inquiry course to develop and explore data collection, analysis methods, and writing strategies applicable to research questions;

### **Student Learning Objectives**

During the semester, students will be:

- Undertaking independent research and complete it satisfactorily;
- Identifying an issue in sustainability and the built environment and through research find a solution to address it;
- Learning to write effective, clear, and well-organized paper that incorporate recognizing an issue, develop a research statement, research the topic, identify its relation to the built environment, identify the best methodology to research the topic, identify findings, and make recommendation;
- Learning and performing public oral communication on the research undertaken and gaining confidence in self and work;

## **COURSE MANAGEMENT**

The course is hosted on Canvas, and each student has a page on the course Canvas site to upload and manage their project. On your Canvas page create a "Mid-term" and "Final project" folder under the "File" tab to upload your mid-term presentation and the final submittals. Each student must set up in Canvas to receive course announcements as the main communication with the course instructor.

Contact your instructor via 352.294.1428 | Canvas email (preferred) | [barmagh@ufl.edu](mailto:barmagh@ufl.edu) (alternative)

## **COURSE TEXTBOOK(S) & TECHNOLOGIES**

There is no required text, but a literature search and bibliography are expected.

### **Optional Text(s) of Interest (Carried Over from DCP 3200)**

- Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approach. Fifth edition. Los Angeles: Sage. 304 pp.
  - <http://www.worldcat.org/oclc/1047939791>
  - Cost | ~ \$60 (MSRP paperback) & ~ \$38 (discounted paperback) & ~ \$36 (eBook)

In addition to the optional text(s) carried over from DCP 3200, various supplemental, free publications identified for class discussion and/or assignments may be supplied via the UF Canvas e-Learning portal (<https://lss.at.ufl.edu/>).

## Miscellaneous Course Costs

printing a research poster.

## Policy on Lost Data

All students are required to maintain an appropriate system for backing-up their work. No accommodation can be made for lost data. We **highly recommend** that you and you mentor created a shared, collaborative, online workspace within the UF GatorCloud (<https://cloud.it.ufl.edu/collaboration-tools/>) environment. The Microsoft Office 365 suite of productivity tools is especially relevant for the SBE Senior Capstone process and deliverables.

## Required Deliverables (Graded)

Assignment	Points	Fall & Spring	Summer C
		Week #	Week #
Midterm Presentation	150	9	8
Final presentation; Academic Research Poster	100	15	13
Final presentation; Three Minute Thesis (3MT)	100	15	13
Final Capstone Report	450	16	14
Student Engagement	200		

- **Midterm Presentation**

- Live presentation (to be delivered at a TBD date and time unique to each semester and student)
  - Logical narrative structure
    - Names of student and mentor
    - Title of study and date of delivery
    - Outline of the presentation
    - Headings and subheadings
    - References section
    - Professional and properly styled and cross-referenced citations within the text and reference the tables and images
  - Duration
    - Student presentation @ 10-12 minutes
    - Audience questions and answers @ 8-10 minutes
- Stand-alone presentation visual and narrative content delivered via one of the following options (note, any web-based content URLs must be authorized for general public access):
  - Microsoft PowerPoint (.PPTX)
  - Microsoft Sway (URL)
  - Google Slides (URL)
  - Esri ArcGIS StoryMap (URL)
  - Adobe Express (URL)

- **Final Presentation**

- **Academic Research Poster**

- Printed poster to physically display during the **Capstone Conference and Celebration**

- Logical narrative structure
  - Names of student and mentor
  - Title and date
  - Headings
  - Resources section
  - Properly styled and cross-referenced citations within the text
- Poster dimensions
  - Landscape orientation
  - 48 inches (4 feet) wide by 36 inches (3 feet) high
- Font sizes (should be readable from approximately 10 feet away)
  - Body font @ 24 point or larger
  - Title font @ 50 point or larger
- Figures and graphics resolution
  - Minimum @ 150 dots per inch (dpi)
  - Preferred @ 200 or more dpi
- Digital poster file (both formats)
  - Adobe Acrobat (PDF)
  - Original software used to create the poster (per one of the options listed below):
    - Adobe InDesign
    - Adobe Photoshop
    - Canva
    - Google Slides
    - Microsoft Publisher
    - Microsoft PowerPoint
  - **Note, this is the software used to demonstrate poster development within the DCP 3200 course.**
- **Three Minute Thesis (3MT) Speech**
  - 3MT @ UF Homepage (<http://graduateschool.ufl.edu/about-us/offices/dgsa/ogio/3mt/>)
  - Live Delivery of 3MT Style Study Summary at Capstone Conference and Celebration
    - Arrive to the event prepared to deliver your 3MT with an oration (no longer than three minutes) and a single static slide
    - Dress professionally
    - Single static slide expectations
    - Appealing visual support for the spoken word research summary
    - Student & mentor names
    - Project title & date
    - Single static slide dimensions
      - Landscape orientation
      - 16x9 ratio (to fill full projection screen)
  - 3MT Style Slide (both formats)
    - Adobe Acrobat (PDF)
    - Original software used to create the single slide (per one of the options listed below):
      - Adobe InDesign
      - Adobe Photoshop
      - Canva
      - Google Slides
      - Microsoft Publisher

- Microsoft PowerPoint
  - **Note, this is the software used to demonstrate poster development within the DCP 3200 course.**
- 3MT Style Prewritten Narrative (both formats)
  - Adobe Acrobat (PDF)
  - Microsoft Word (DOCX)
- **Final Capstone Report**
  - Final Capstone project report
    - Logical and professional narrative structure
    - Student and mentor names
    - Title and date
    - Table of content
    - Headings and subheadings
    - References section
    - Properly styled and cross-referenced citations within the text
      - American Psychological Association (APA) style
        - <https://apastyle.apa.org/>
  - Word count
    - Minimum 8,000 words
    - Maximum 10,000 words
    - Word count includes:
      - Title page, table of contents, abstract, report body narrative, tables, figure, and references
    - Word count does not include:
      - Appendices
      - Supplemental information and/or materials
  - Document parameters
    - The final paper should be double spaced, size 12 font.
    - The font style of the final written text can be Times New Roman, Calibri, or Arial unless determined otherwise by the faculty mentor.
    - The faculty mentor is not to serve as a copy editor.
  - Document submission type (both formats)
    - Adobe Acrobat (PDF)
    - Microsoft Word (DOCX)
- **Final deliverables**
  - Students upload to their Canvas page the midterm presentation under mid-term folder, report, digital poster, and 3MT slide under final project folder.
  - Students email the above deliverables to their mentor and Pat Dejong at Advising.
  - Honor students will receive an email from Pat Dejong at Advising the last week of the semester about submitting your paper for honors recognition.

## GUIDANCE ON CITATION MANAGEMENT

All SBE Senior Capstone projects are expected to demonstrate academic standards in citation management. We request that you use the American Psychological Association (APA) Style for all citations. While students are welcome to use their own choice of tools and approaches for managing their citations, we **highly recommend** that students use citation management software, such as Zotero (which is taught in DCP 3200). With a multi-thousand-word count and a minimum of 20 resource citations, and often up to 40 or more,

the SBE Senior Capstone is a serious research endeavor that necessitates a professional level of resource management from start to finish.

## How to Cite References

- American Psychological Association (APA) Style
  - Homepage
    - <https://apastyle.apa.org/>
  - Reference Examples
    - <https://apastyle.apa.org/style-grammar-guidelines/references/examples>
- Purdue University > Online Writing Lab (OWL)
  - Homepage
    - <https://owl.purdue.edu/>
  - Research & Citation Resources
    - [https://owl.purdue.edu/owl/research\\_and\\_citation/resources.html](https://owl.purdue.edu/owl/research_and_citation/resources.html)
  - APA Style Introduction
    - [https://owl.purdue.edu/owl/research\\_and\\_citation/apa\\_style/apa\\_style\\_introduction.html](https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_style_introduction.html)

## Citation Management Software

- Wikipedia > Comparison of major options
  - [https://en.wikipedia.org/wiki/Comparison\\_of\\_reference\\_management\\_software](https://en.wikipedia.org/wiki/Comparison_of_reference_management_software)
- RefWorks
  - <http://www.refworks.com/tutorial>
- EndNote
  - <http://www.endnote.com/training>
- Zotero
  - <https://www.zotero.org>
  - Word processor plugins
    - [https://www.zotero.org/support/word\\_processor\\_integration](https://www.zotero.org/support/word_processor_integration)
- Mendeley
  - <https://www.mendeley.com/>

## Optional Milestones (Ungraded Guidance)

Milestone	Week #
Mentor Meet & Greet	2
Problem Statement & Research Questions	3
Introduction & Preliminary Literature Review	5
Materials & Methods, mid-term presentation	7
Data Collection & In-Depth Literature Review	11
Data Analysis	12
Results	13
Discussion & Conclusion	14

Grades are awarded by the student's mentor and based on evidence that students have completed all required deliverables with a high level of student-to-mentor engagement and project due diligence

throughout the semester. Completed tasks will be evaluated based on pertinence of content, critical thinking, creativity, and communication. Further details, due dates, and rubrics for assignments are posted on Canvas. As a 6-credit course, and based on the University of Florida standards, we anticipate that students should be putting approximately 12 to 24 hours per week into work on your SBE Senior Capstone. This is not a project to take lightly, nor to wait until the last minute to complete.

<i>Grade</i>	<i>Points (GPA)</i>	<i>Percent</i>	<i>Grade</i>	<i>Points (GPA)*</i>	<i>Percent</i>
A	930-1000 (4.00)	93.0-100.0%	C	730-769 (2.00)	73.0-76.9%
A-	900-929 (3.67)	90.0-92.9%	C-	700-729 (1.67)	70.0-72.9%
B+	870-899 (3.33)	87.0-89.9%	D+	670-699 (1.33)	67.0-69.9%
B	830-869 (3.00)	83.0-86.9%	D	630-669 (1.00)	63.0-66.9%
B-	800-829 (2.67)	80.0-82.9%	D-	600-629 (0.67)	60.0-62.9%
C+	770-799 (2.33)	77.0-79.9%	E	000-599 (0.00)	0.0-59.9%

Final student grades are rounded up on the hundredths units (i.e., a 92.95% becomes a 93.0%) and follow University of Florida grades and grading policies.

- Undergraduate Students:
  - <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

## COURSE POLICIES

### Make Up Policy

No late work will be accepted without prior approval of the faculty mentor and the SBE program. Computer problems that arise during submission will not be accepted as an excuse for late work. Make-up options will be available at the discretion of the faculty mentor and SBE program.

### Late Submittals

Late submittals with no prior approval or excused absence will be dropped a letter grade for each 24-hour period. Part of the student's responsibility is to stay on their designated Critical Path and determine ways to complete the necessary work in a timely way.

Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:

- <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

## STUDENT & MENTOR EXPECTATIONS

We **highly recommend** that both the student mentee and the mentor explore the UF Center for Undergraduate Research (CUR) eLearning resources for how to make the most of your time together.

- UF CUR eLearning > Student Module Series
  - <https://cur.aa.ufl.edu/cur-e-learning/>

### Mentors > What to Expect of the Process

SBE Senior Capstone mentors provide a deeply valued service to our students and the program overall. While often faculty and staff within the College of Design, Construction, and Planning, mentors may originate from other teaching, research, outreach, and/or operational units across the broader University of Florida institution, from other academic institutions, or even from public, private, or non-governmental organizations with mutual interests.



Mentors are skilled in the topical domain of the project being undertaken by the student mentee and willing to guide their project design, development, deployment, data collection, data analysis, and public communication. The typical commitment necessitates mentors engage in the following activities summarized below.

- Facilitate periodic mentorship meetings (e.g., 30-minutes weekly or bi-weekly based on student needs and mentor availability);
- Support student mentee progress (e.g., project schedule, milestone attainment, required deliverable preparation) and asynchronous communications (e.g., responding to questions, project troubleshooting);
- Attend the live, synchronous Midterm Presentation(s) and Final Capstone Conference and Celebration (either online via Zoom or on campus on the designated date and time);
- Evaluate and offer feedback on the Required Deliverables (RD); and
- Provide the SBE program with a final student grade for the course (as informed by the provided rubrics).

## **Mentors > What to Expect of Your Student Mentee**

Ideally, students should expect their mentor to provide the following:

- Compassionate curiosity and a sense of wonder about the research topic;
- Effort, earnestness, and equanimity in the research process and project deliverables;
- Punctuality and consistency in mentorship meetings;
- Positive attention and intention toward the project and the mentor engagement;
- Due diligence in timely and comprehensive completion and submission of required deliverables;
- Proper citation management; and
- Adherence to proper netiquette and all University rules and regulations.

## **Student Mentees > What to Expect of the Process**

We congratulate our program seniors for arriving at this final required course in your SBE curricula. A brief overview of the process is provided below. A more in-depth explanation of, and preparation for, the Senior Capstone projects is provided in the curriculum of DCP 3200 Methods of Inquiry, a core course within the SBE program and a pre-requisite for the Senior Capstone.

- Project Initiation:
  - Students are strongly encouraged to identify a project and a mentor at the end of DCP 3200 course or no later than two weeks before the start of the semester in which they will enroll in the DCP 4290 course. In order to register for the capstone, a student must complete the capstone [registration form](#) that requires a written description of the proposal along with both the student and mentor signatures.
- Public Engagement:
  - Students are required to engage with other internal and external stakeholders (beyond the mentor) in both the middle and end of the semester. These engagements will mix formal and informal interactions, student public speaking, and both a readiness and willingness to provide well-reasoned responses to audience questions and answers.
- Midterm Presentation:
  - Approximately halfway through the semester, students are required to make a midterm presentation (10-12 minutes) to describe their progress to date and delineate their next steps to complete their project. After the presentation, an additional 8-10 minutes of audience interaction via questions, discussion, and feedback will be provided. At this stage, the audience is generally SBE program faculty and advisors, as well as the mentor, though not student peers, nor the general public.



- Final Capstone Conference & Celebration:
  - At the end of the semester just prior to the institutionally scheduled reading days, students are required to attend a poster conference and Three Minute Thesis (3MT) style research presentation competition. This event will be designed similar to an academic conference where students will share their 3MT speeches in a lightning round, followed by standing with their posters as the audience browses the research summaries and engages with the students. At this stage, the audience will include SBE program faculty and advisors, mentors working with any SBE student past or present, other students from SBE, DCP, or other academic units, and/or invited family and friends. The event will end with a social celebration of SBE Seniors finishing their Capstones. Light snacks and beverages will be provided for attendees who register in advance.

## Student Mentees > What to Expect of Your Mentor

Ideally, students should expect their mentor to provide the following:

- Reasonable accessibility and responsiveness at the key strategic moments in the process;
- Clear communication about expectations tailored to the mentor and mentee engagement perspectives and preferences;
- Compassion for the student and their unique learning needs and personal approaches to the project completion;
- Enthusiasm for their proposed research topic;
- Unbiased guidance and a willingness to challenge student perceptions and positions to inspire iterative improvement through critical thinking; and
- A commitment to student success and professional development.

## ATTENDANCE & PUNCTUALITY

Attendance at the Midterm Presentation and Final Capstone Conference & Celebration is **mandatory**, and participation is graded based on your preparation and punctuality. Lack of preparedness and/or tardiness leads to point deductions for those deliverables.

Requirements for participation, assignments, and other potential make-up work in this course are consistent with University policies as found at the following link.

- <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

## Professionalism

As future sustainability professionals in training, you are preparing for potential future meetings and collaboration. Thus, for all public milestones, deliverables, and/or events, students are encouraged to participate in-person and/or online with dress and demeanor befitting a professional environment.

## CHANGES AND REVISIONS TO SYLLABUS

This syllabus is subject to change. Any changes will be relayed via your course instructor.

## Additional Information

Provided on Canvas page including:

- Research and writing methods
- Sample report
- Samples 3MT
- Poster printing locations and cost
- Memo to the mentors

### Getting Help

#### Health and Wellness

##### U Matter, We Care:

If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or **352 392-1575** so that a team member can reach out to the student.

**Counseling and Wellness Center:** <http://www.counseling.ufl.edu/cwc/Default.aspx> , **392-1575**; and the University Police Department: **392-1111** or **9-1-1** for emergencies.

#### Sexual Assault Recovery Services (SARS)

**Student Health Care Center, 392-1161.**

**University Police Department, 392-1111** (or 9-1-1 for emergencies). <http://www.police.ufl.edu>

#### Academic Resources

E-learning technical support, **352-392-4357** (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)/  
<https://lss.at.ufl.edu/help.shtml>

### Other Campus Resources

**Career Resource Center**, Reitz Union, **392-1601**. Career assistance and counseling.  
<http://www.crc.ufl.edu>

**Library Support**, <http://cms.uflib.ufl.edu/ask> . Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, **392-2010** or **392-6420**. General study skills and tutoring.  
<http://teachingcenter.ufl.edu>

**Writing Studio**, 302 Tigert Hall, **846-1138**. Help brainstorming, formatting, and writing papers.  
<http://writing.ufl.edu/writing-studio>

**Student Complaints Campus:** [https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)

**On-Line Students Complaints:** <http://www.distance.ufl.edu/student-complaint-process>

## University Policies

### Online course evaluation

Students expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://gatorevals.aa.ufl.edu/students/>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### Students with Disabilities:

Students requesting accommodation for disabilities must first register with the Disability Resource Center (DRC). The DRC coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues.

Upon registering, the DRC will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking quizzes or exams. Accommodations are not retroactive; therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations. Contact DRC at **352-392-8565**, or viewing, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/).

### Student Honor Code and Academic Honesty

UF students are bound by The Honor Pledge, which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions.

### Software Use:

All faculty, staff and students at the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. As such, violations are also against university policies and rules, disciplinary action will be taken as appropriate.

### Religious Observances:

Please inform the instructor of any religious holidays or other days of special religious significance that may interfere with your participation in this class so that appropriate accommodations can be made.

### Sexual Harassment:

Sexual harassment is reprehensible and will not be tolerated by the University. It subverts our academic mission and threatens the careers, educational experience, and well-being of students, faculty, and staff. The University will not tolerate behavior between, nor among, members of this community that creates an unacceptable working environment.