

SSCI 350 (35736): International GeoDesign

Units: 4

Term — Day — Time: Maymester 2024; May 14 – June 14, 2023

Location: Amsterdam and Rotterdam, Netherlands

Instructor: Laura Loyola, PhD

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Regular Office Hours: TBD available by appointment.

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Course Scope and Purpose

The goal of this course is to introduce students to the critical and spatial thinking skills of Geodesign while engaging them in both classroom and field settings. Additionally, this course will enable students to apply these skills in a final Geodesign project that proposes design and planning strategies to address societal and environmental challenges in the real world.

Geodesign is a forward-thinking, interdisciplinary framework that combines planning, design, and environmental systems management with geospatial technologies to explore ways to build a better world. As interest and demand for sustainable development gain traction nationally, internationally, and across the University of Southern California (USC) campus, the use of Geodesign principles is becoming increasingly valuable to address global challenges and foster healthy human-environment relationship.

The practice of Geodesign in the Netherlands is centuries old, and the Dutch, in particular, have long been leaders in designing land uses to maximum efficiency while minimizing adverse environmental impacts. Today, the Netherlands is particularly advanced in the integration of land use management, transportation systems, ecological conservation, urban development, and geospatial technologies. Alternative energy sources and advanced transportation systems are hallmarks of Dutch ingenuity. Accordingly, Dutch leadership in sustainability and Geodesign are worthy of student inquiry and investigation by means of an intensive field experience.

Initially, students will work on the USC campus for the first two weeks to grasp the core concepts of Geodesign, sustainable development, people and place, urban and landscape planning, and geospatial technologies. During the subsequent three weeks, students will travel to Netherlands and while based in the capital city of Amsterdam will explore other parts of the country including Delft (home of delftware pottery and the painter Johannes Vermeer), Utrecht, and Keukenhof (home of tulip gardens), and Rotterdam which will be the focus of the transportation and port project for the class. Students will conduct extensive and comprehensive field-based research after meeting with the interdisciplinary faculty from the Amsterdam University College (AUC) and the Vrije Universiteit (the VU) and experts in geodesign and geospatial technologies in Rotterdam. Students will develop a geodesign intervention related to transportation or port development (based on student interest) based in the Geodesign principles and framework. Before the students leave they will present their project and reflections to relevant stakeholders that they have met with during their time in Netherlands. Taken as a whole, this course provides a broad understanding (theoretical and practical) of the relationship between human and natural systems, investigates how and why people transform natural and built environments into residential, commercial, and/or industrial uses, and the impacts these decisions have on environmental vitality, economic sustainability, and human health and well-being.

Learning Objectives

On completion of this course, students should be able to:

- Explain representative challenges of urbanization, resource management, sea level rise, pollution, environmental degradation, and climate change;
- Describe the ways in which these challenges have been addressed in exemplar settings;
- Identify and compare successes and challenges in addressing these issues in developing countries across the world.

- Investigate the relationship between human and natural systems in theoretical and practical terms, and categorize how and why people transform natural and built environments;
- Learn to use geospatial data and geospatial tools to aid investigations;
- Become familiar with decision-making processes that follow Geodesign principles.

Students may vary in their competency levels on these abilities. You can expect to acquire these abilities only if you honor all course policies, attend classes regularly, complete all assigned work in good faith and on time, and meet all other course expectations of you as a student.

Prerequisite(s): None

Co-Requisite (s): None

Concurrent Enrollment: None

Recommended Preparation: None

Class Conduct

Harassment, sexual misconduct, interpersonal violence, and stalking are not tolerated by the university. All faculty and most staff are considered Responsible Employees by the university and must forward all information they receive about these types of situations to the Title IX Coordinator. The Title IX Coordinator is responsible for assisting students with supportive accommodations, including academic accommodations, as well as investigating these incidents if the reporting student wants an investigation. The Title IX office is also responsible for coordinating supportive measures for transgender and nonbinary students such as faculty notifications, and more. If you need supportive accommodations, you may contact the Title IX Coordinator directly (titleix@usc.edu or 213-821-8298) without sharing any personal information with me. If you would like to speak with a confidential counselor, Relationship and Sexual Violence Prevention Services (RSVP) provides 24/7 confidential support for students (213-740-9355 (WELL); press 0 after hours)

Diversity and Inclusion – It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students’ learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful to everyone, and you are also expected to respect of others regardless of their race, ethnicity, gender identity and expressions, cultural beliefs, religion, sexual orientation, national origin, age, abilities, ideas and perspectives, or socioeconomic status. Your suggestions are encouraged and appreciated. Feel free to let me know ways to improve the effectiveness of the course for you personally or for other students.

Course Organization

This course is a 5-week intensive living and learning experience comprised of lecture sessions, hands-on workshops, paired with an experiential learning component. The lecture sessions will utilize readings, discussions, presentations, and videos to introduce core concepts of Geodesign which include urban and landscape planning, land management, human-environment interactions, and geospatial technologies, among other topics. Workshops are tailored to teach students operational skills to work with geospatial data and technologies. The field experience will consist of a three-week study abroad where the class will engage applications and the theory of Geodesign through guest lectures, field excursions, exploratory analysis, and an applied Geodesign final project. The Geodesign final project will be organized and completed with local stakeholders and colleagues at the USFQ.

Course Content Distribution and Synchronous Session Recordings Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is prohibited. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which has been distributed to students or in any way has been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Technological Proficiency and Hardware/Software Required

Students do not need to have prior experience with GIS software. The GIS software and geospatial data required for course assignments will be accessed using computing resources provided by the Spatial Sciences Institute.

SSI Server and Tech Support – This course utilizes the SSI Server which is a virtual desktop giving access to many different professional software. If you are unable to connect to the server or experience any type of technical issues, send an email using your USC account to Tech Support at spatial_support@usc.edu, making sure to copy (cc) your instructor on the email.

Every student must have the following technology requirements:

- A computer with a fast Internet connection.
- A functional webcam and a microphone
- An up-to-date web browser to access the Server

If a student does not have access to any of these, please speak with the instructor at the start of the semester. Also, see the USC ITS Student Toolkit here:

<https://keep-teaching.usc.edu/students/student-toolkit/>

Required Readings and Supplementary Materials

- Wilson, J., (2014) *Towards Geodesign: Building New Education Programs and Audiences*, In (Ed.) Lee, D., E. Dias, and H. J. Scholten. 2014. *Geodesign by Integrating Design and Geospatial Sciences*. Switzerland, Springer.
- Miller W. (2012) *Introducing GeoDesign: The Concept*. Redlands, CA, Esri Press.
- Van der Cammen, H., de Klerk, L., Dekker, G., Witsen, P. 2013. *The Selfmade Land: Culture and Evolution of Urban and Regional Planning in the Netherlands*, Spectrum,
- Dutch Ministry of Infrastructure and the Environment. 2012. *35 Icons of Dutch Planning*, PDF

- Feddes, F. 2012. A Millennium of Amsterdam – A spatial history of a marvelous city. Thoth

Supplementary readings will be assigned from various sources.

Description and Assessment of Assignments

Your grade in this course will be determined on the basis of several different assessments:

Reading Assignments (10 points): You will complete assignments on readings that inform Geodesign by providing 2- page reflections on the concepts, principles, and/or case studies covered in the readings.

Oral Presentations (10 points): You will prepare and deliver a 10-15 minute oral presentation accompanied by slides (ppt, story map, or other media is accepted) to discuss a Geodesign case study.

Field Activities (15 points): You will be required to participate in all activities for the course, each weekday (Mon – Fri) of the field experience.

Field Research (15 points): You will pick a research topic and complete your research and analysis during the field activities. The research work will culminate in a short presentation and a short research paper (2 pages).

Final Geodesign Project (30 points): You will produce a Geodesign project with your teammates focusing on the environmental issues in the study area. You will deliver a final oral presentation to local stakeholders on the design or plan that integrates Geodesign concepts and your research.

Field Experience Story Map (15 points): You will create and present an online Story Map that illustrates activities, observations, reflections, and key locations of the field experience.

Class participation (5 points): You are expected to actively participate in class sessions at the USC campus through discussions and workshops. This is separate from participation in activities that are a part of the international field experience.

Grading Breakdown

Assignment	# of Assignments	Total Points
Reading Assignments	2	10
Oral presentations	2	10
Field Activities	5	15
Field Research (journal)	1	15
Final Geodesign Project	1	30
Field Experience Storymap	1	15
Class participation		5
TOTAL	18	100

Assignment Submission Policy

Assignments will be submitted for grading via Blackboard using the due dates specified in the Course Schedule below. Late work will be assessed a penalty of 10% per day and zero grades will be assigned for work that is more than one week late. No work will be accepted for grading after 5 pm PT on the last day of the Maymester session.

Additional Policies

Students are expected to attend and participate in a mandatory orientation session on UPC campus, every class session, and to complete and upload all assignments before the deadlines detailed in the Course Schedule.

The anticipated number of contact hours between instructor and student for this course, including field experience, is 70 hours. Course meetings at USC comprise 16 hours (8 two-hour sessions); the field experience counts for 54 hours.

Schedule

	Topic	Readings and Assignments	Deliverables/Due Dates
Meeting 1 February 2024	Initial Meeting: Course Introduction An initial meeting will be held the first week of February to introduce the course topics and semester expectations.		No deliverables
Week 1 May 13 – 17, 2024	Module 1: Core Concepts of Geodesign: Students will be introduced to/review core concepts of Geodesign and the international case study through a combination of lectures, readings, discussions, and hands-on activities.		Complete by Friday Reading Assignment 1;
Week 2 May 20 – 24, 2024	Module 2: Skill-building and Self-directed Research The second week of class is for students to complete and reflect upon course readings, and acquire essential skills to work with geospatial data and geospatial technologies.		Complete by Friday Reading Assignment 2; Oral Presentation #1
	Module 3: Field Experience Time spent during the field experience will involve: 1) Lectures, field trips, and fieldwork; 2) Independent study time (est. 2 hrs/day); and 3) Personal/ recreation time.		

	Topic	Readings and Assignments	Deliverables/Due Dates
Week 3 May 25 – 31, 2024	Trip Preparation Day 1 Travel to Amsterdam, Netherlands Day 2: Orientation to Amsterdam, bike tour of the city Day 3: Management meeting and discussion, guest lecture on geodesign Day 4: Rotterdam site visit #1 – Esri office visit Day 5: AUV/VU guest lectures Day 6: Rotterdam site visit #2 – tour of port Day 7: Delft cultural tour		
Week 4 June 1 – 7, 2024	Day 1: Free Day 2: Excursion to Keukenhof Day 3: Rotterdam site visit #3 – stakeholder meeting Day 4: Interviews with local stakeholders Day 5: Field visits as needed and dinner Day 6: Cultural and urban design tour of Borneo-Sporenburg Day 7: Week 2 summary meeting and reflections/ project work		Oral Presentation #2 Field Research Journal due end of Week 4
Week 5 June 8 – 12, 2024	Day 1: Free Day 2: Rotterdam site visit #4 Day 3: Wrap up geodesign project Day 4: Final presentations and final dinner Day 5: Fly back		Project presentation 6/11 Report due 6/14 StoryMap due 6/14
	Complete by 6/14		

Statement on Academic Conduct and Support Systems

Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on [Research and Scholarship Misconduct](#).

Students and Disability Accommodations

USC welcomes students with disabilities into all of the University’s educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu

Support Systems

Counseling and Mental Health - (213) 740-9355 – 24/7 on call

studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call

suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call

studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086

eeotix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776

osas.usc.edu

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity, and Inclusion - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu

Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
ombuds.usc.edu

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - (323) 442-3340 or otfp@med.usc.edu
chan.usc.edu/otfp

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.