

CIVE 5705: ADVANCED BUILDING CHARACTERIZATION, CONSERVATION AND REHABILITATION

COURSE SYLLABUS – FALL 2019

INSTRUCTOR: Dr. **Mario Santana Quintero**, Associate Professor
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613-520-2600 x7468 – Office x 3093,
Office: Canal Building, Office 5207 (5th floor)
Lab: Carleton Immersive Media Studio (CIMS)
Visualization & Simulation (VSIM) Building, 4th floor

CLASS LECTURES: Thursdays 2:35 pm – 5:25pm
Canal Building 3101

Course description

This course will provide graduate students with an understanding of the fundamental concepts and techniques for the identification, documentation and conservation of heritage buildings and existing buildings. The course includes lectures and workshops by experts representing the key disciplines and practice areas involved in heritage conservation and documentation.

The course comprises three hours per week of lectures, plus additional activities assigned by the course instructor.

At the completion of the course, the student will be able to:

- Discuss and apply the fundamental concepts involved in the identification and conservation of heritage places in Canada and internationally;
- Understand digital workflows for identifying, recording, modelling, assessing, analyzing and interpreting existing buildings and sites;
- Apply and conduct research to identify heritage values and attributes of buildings and sites;
- Apply and conduct techniques for recording and modelling existing buildings and sites;
- Apply and conduct techniques for energy modelling;
- Apply and conduct research on construction materials, assemblies and building envelopes for rehabilitation and preventative maintenance purposes;
- Understand the role of monitoring systems in improving the maintenance and care of existing buildings;
- Understand and apply heritage conservation approaches such as heritage impact assessments and conservation plans;
- Understand the roles of different disciplines, government authorities and organizations in heritage conservation and rehabilitation; and
- Understand and apply ethical principles in heritage decision making.

Prerequisites: open to all graduate students with a particular interest in heritage structures.

Biographical sketch of instructor

Mario Santana-Quintero, is an associate professor at department of Civil and Environmental Engineering Carleton University. He is also the Director of the NSERC Create program Heritage Engineering based at the Carleton immersive Media Studio Lab (CIMS). He is also a guest professor at the Raymond Lemaire International Centre for Conservation (University of Leuven). Along with his academic activities, he serves as Vice President of the International Council of Monuments and Sites (ICOMOS) and he is the past president of the ICOMOS Scientific Committee on Heritage Documentation (CIPA). Furthermore, he has been a Getty Conservation Institute scholar and he collaborated in several international projects in the field of heritage documentation for The Getty Conservation Institute, UNESCO, Bahrain Authority for Culture and Antiquities, ICCROM, World Monuments Fund, UNDP, Welfare Association, and the Department of Culture and Tourism of Abu Dhabi.

Course Website & Communication

All course information, including lecture notes, readings and other resources, will be available through cuLearn. All assignments must be submitted through cuLearn. All students are responsible for ensuring that they are correctly registered through cuLearn and are receiving messages properly through their official university email address. Students are responsible for checking the cuLearn course management site and their official email account frequently.

I am happy to answer questions related to course content or administration via email. I will endeavor to reply to emails as soon as possible, but please expect a possible delay of up to 48 hours for a response and do not expect a response on Saturday or Sunday. Emails must come from official Carleton University email addresses or through cuLearn. I will not respond to emails from outside addresses.

I am happy to meet with you to discuss course content or administration, provided you set up an appointment with me by email. My office is located in the Carleton Immersive Media Studio (CIMS) on the 4th floor of the Visualization and Simulation (VSIM) Building.

Class schedule

Please note that this schedule is subject to change.

Date	Session	Title
September 5	Week 1	Why is this place significant and what should I do about it? Making decisions about heritage properties <i>Guest: Laurie Smith</i> Graduate research seminar 1 on heritage conservation <i>Guest: Raluca Dobrotescu</i>
September 12	Week 2	Introduction to the Course. Digital Workflows for Rehabilitation and Conservation of Heritage Places Introduction to Photogrammetry and 3D Scanning

September 19	Week 3	Tutorial on Photogrammetry Presentation of case studies in photogrammetry & laser scanning. Guest: Miquel Reyna Ortiz Assignment 1 and 2 due.
September 26	Week 4	Recognizing Existing Buildings Scientific Research Approach for Dissertation on Studying Buildings
October 3	Week 5	Graduate research seminar 2: <ul style="list-style-type: none"> • High-speed heritage • Research methods in architecture: the Palestinian refugee camps from crisis to cultural heritage <i>Guests: Adam Weigert, Reem Awad</i>
October 10	Week 6	Case studies in heritage impacts and conservation planning. <i>Guest: James Maddigan, Architecture 49.</i>
October 17	Week 7	Building Information Modelling. Lab exercise in BIM. <i>Guest: Lara Chow CIMS.</i>
October 31	Week 8	Digitally Assisted Storytelling. <i>Guests: Katie Graham.</i> Lab exercise in DAS. Assignment 3 due.
November 7	Week 9	Structural considerations – seismology. Exercise in seismology. <i>Guests: Prof. Jeff Erochko and Raluca Dobrotescu</i>
November 14	Week 10	Graduate research seminar 3 <ul style="list-style-type: none"> • Research methods in engineering: the Geometric Documentation of Painted Surfaces <i>Guest: Abhu Dhanda</i>
November 21	Week 11	Energy Performance in Buildings Scott Bucking – Michael Gutland (Assignment 4 - DRAFT).
November 28	Week 12	Loose ends and student presentations (Assignment 5).
December 5	Week 13	Student presentations (Assignment 5).

Bonus Activities

Attendance at the following bonus activities is required for NSERC CREATE students, optional for other students (see grading for Bonus Assignment).

Date	Session	Title
November 8	A - 1	NSERC CREATE Heritage Forum (9:30am-4:00pm) Location: CIMS, VSIM Building, 4 th floor

November 9	A - 2	NSERC CREATE Heritage Workshop (9:30am – 4:30pm) Location: CIMS, VSIM Building, 4 th floor
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Other activities will be announced later in the semester. Attendance at the following activities is optional for all students. See grading for Bonus Assignment.

Grading

Item	Weight for final grade	Due date
Course compliance - Students are expected to attend all lectures, arrive on time, participate in class discussions and provide feedback about assignments. Absences will generally be excused only for emergencies.	20%	
Assignment 1 (mandatory) - Prepare an introductory page outlining your research interests, your background, and your objectives in taking the course.	10%	Sept 19, 2019, 2:30pm
Assignment 2 (mandatory) - Photograph a building/site for the photogrammetry workshop	(included in Assignment 4)	Sept 19, 2019, 2:30pm
Assignment 3 (mandatory) – Working alone, review an academic article or research a technical treatment.	20%	Oct 31, 2019, 2:30pm
Assignment 4 (mandatory) – Report: working in pairs, create a heritage conservation workflow for a site, with at least six components.	30%	Draft due Nov 21, 2019, 2:30 pm. Final due Dec 6, 11:55 pm.
Assignment 5 (mandatory) – Presentation: working in pairs, present a heritage conservation workflow for a site, with at least six components.	20%	Nov 28, 2019, 2:30 pm
TOTAL	100%	
Bonus Assignment (optional) – attend and report on one of the additional activities	10%	Dec 6, 2019, 11:55pm

Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit [the Equity Services website](#).

Religious obligation: Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit [the Equity Services website](#).

Academic Accommodations for Students with Disabilities: “The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). Requests made within two weeks will be reviewed on a case-by-case basis. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam (if applicable). “

Survivors of Sexual Violence: As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton’s Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit carleton.ca/sexual-violence-support.

Accommodation for Student Activities: Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, see [the policy](#).

Academic Integrity

The University Senate defines plagiarism as “presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.” This can include:

- reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source;
- submitting a take-home examination, essay, laboratory report or other assignment written, in whole or in part, by someone else;
- using ideas or direct, verbatim quotations, or paraphrased material, concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another’s data or research findings;
- failing to acknowledge sources through the use of proper citations when using another’s works and/or failing to use quotation marks;
- handing in "substantially the same piece of work for academic credit more than once without prior written permission of the course instructor in which the submission occurs.

Plagiarism is a serious offence that cannot be resolved directly by the course’s instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of "F" for the course.

FINAL GRADES

Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.

COURSE COPYRIGHT

My lectures and course materials (including all Indesign, PowerPoint presentations, handouts, and similar materials) are protected by copyright. I am the exclusive owner of copyright and intellectual property of all course materials. You may take notes and make copies of course materials for your own

educational use. You may not allow others to reproduce or distribute lecture notes and course materials publicly for commercial purposes without my express written consent.