

## Course Syllabus

Scientific and technological progress have accelerated rapidly in the past 100 years. To a large degree this is because of a certain shift in world view. It is not that Western civilization was composed of an unusual level of intelligence, but rather that a certain style of logical thinking was developed. This approach may have inherent weaknesses, but it has proven useful to the advancement of human knowledge as is related to “hard sciences”, and has even been useful in clarifying thoughts in other areas of endeavor.

Renee Descartes<sup>1</sup> provided a useful codification of the process which forms the basis of most current research, and which allows us to attack a specifically defined problem or issue with a certain intellectual rigor. This class will introduce the student to the thesis process, and other research tools, and discuss the strengths and weaknesses of the thesis as a way of increasing knowledge in different kinds of applications. Indeed, within the fields of Architecture and Building Science, we are often more interested in overlapping areas, or their interaction, which makes the application of the thesis process particularly interesting.

USC Building Science currently allows individualized thesis topics. This means that the student is not confined to specific coursework after the core and one advanced courses, and may look for areas of overlap and special interest to the student. This gives the student great freedom. It is also dangerous, in that the student can flounder. For that reason, it is important that the student understand the thesis process completely; the student will use it to become responsible for their own educational goals, and whether or not those goals are achieved. Make no mistake, this is not easier for the student nor the instructor. It requires a great deal of individualized work. But it can be extremely rewarding.

It is the goal of the USC MBS program to educate students, and in some small way add to the knowledge base in the Building Science areas. It is the goal of this course to introduce students to the methods used in that search for knowledge and to topics which are strongly supported at USC.

The course will be divided into four segments:

- I. Thesis process
- II. Research tools
- II. Thesis topics
- III. Work on individual thesis development

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<sup>1</sup> Descartes, Renee; a French mathematician, scholar and philosopher whose rules of logic, examination and proof we will examine in the next few classes.

## COURSE OUTLINE

<u>Date</u>	<u>Week</u>	<u>Lecture Topic</u>	<u>Assignment</u>
8/28	1.	The Scientific Method	
9/4	2	Thesis Process, Sample Theses	(Prepare notes on a selected paper for 9/18)
9/11	3	Literature search tools (library, web, net)	
9/18	4.	guest lecture: Murray Milne, Carbon Footprint	DUE: finalized bibliographic notes
9/25	5.	guest lecture: Karen Kensek, Computer applications	
10/2	6.	guest lecture: Doug Noble, Theory and...	
10/9	7.	guest lecture Thomas Spiegelhalter, Sustainability	
10/16	8.	guest lecture Goetz Schierle, Structures	
10/23	9.	guest lecture: Marc Schiler, Glare, Climate Response	
10/30	10	guest lecture: Pablo LaRoche or Jerry Christoff	(Prepare 3 thesis topics for 11/6.)
11/6	11.	guest lecture (Madhu Thangavelu)	DUE: three thesis topics
11/13	12.	class discussion of proposed topics	(Prepare a thesis proposal by next class, including proposed committee.)
11/20	13.	discussion of final thesis proposals	DUE: thesis proposal, on paper and in class
11/27	14.	Thanksgiving Break	
12/4	15.	Suzanne Alexander – forms, format, submittal processes, Schiler - sources, committee, equipment, data, scheduling	DUE: Thesis proposal with schedule and signed committee forms.
Final Exam		Thesis topic, thesis committee sheet with signatures and proposed schedule	