School of Architecture | Georgia Tech | Spring 2027
ARCH 7350: Foundations of Architecture Theory (three credits), jointly with
ARCH 4140: Modern and Contemporary Architecture Theory and Criticism (three credits).

THE CHIASTICS OF ARCHITECTURE

Required Course for NAAB Programs (M.Arch2 and M.Arch3), and Elective for a limited number of Jr/Sr undergrad students.

Credit Hours:	three lecture credits
Classroom:	Ford Building, room L1255.
Days and hours of class:	Tue/Thu 12.30-1.45pm
Prerequisites:	Graduate standing or permission of instructor
Instructor:	Prof. Lars Spuybroek: lars.spuybroek@design.gatech.edu Office: Arch West, room 356 Office Hours: on appointment
GTAs:	Crystal Le: cthuy3@gatech.edu Chase Scholze: cscholze6@gatech.edu

Course Description (from the Catalog)

Reviews thought and attitudes guiding architecture, their philosophical sources, and their relationship with architectural production. Defines architectural theory.

Course Overview

The Foundations of Architecture Theory course revolves around the questions that have occupied architecture since time immemorial. Do we inhabit buildings or do buildings inhabit us? Do we seek predictable behavior in predictable environments or do we seek freedom and the unforeseen? Does architecture bind us to the here and now or does it seek to make us dream of other worlds? Do we make rules or do the rules make us? At the heart of these questions lies the relationship between *organon* and *pharmakon*, the former being the realm of both conceptual and practical tools, the latter that of the ambiguity and reversibility of those tools. The *instrumentation of thought*, that is, the ability to instruct its materials, its designers, its builders and even its inhabitants, has always been architecture's main objective. But time and time again these tools have proven to be ambivalent. Habits have turned into programs, space into politics, technology into control, or, as the definition of *pharmakon* goes, remedy into toxin. And yet these transformations also move in the opposite direction. The brilliance of architecture has never been to resist ambiguity but to embrace it and make it work regardless of style or age. Our tool for developing a fundamental theory of architecture will be the "chiastic structure of thought" or a "chiastics" that allows ambiguity to turn into a working mechanism of reciprocity. Architecture is driven by categories that at first seem statically opposed, to suddenly switch positions, and keep on switching positions in order to create a specific set of figural pairs that constitute the theoretical structure of architecture.

Our study focuses on six categorical pairs (which we will refer to hereafter as "double topics" or "dual themes"): (1) Organon/Pharmakon; (2) Habit/Inhabit; (3) Space/Room; (4) Matter/Form; (5) Design/Machine; (6) Ornament/Pharmakon.

Course Objectives

This course is designed to achieve the following objectives:

1. To understand that architecture theory is completely different from scientific theories, which explain natural phenomena in terms of fundamentals such as space, time, and matter. Architecture theory must deal directly

with such fundamentals, and therefore cannot rely on deeper principles.
2. To understand that architectural fundamentals are not singular categories, but double up or split up the closer we study them. This doubling we will call "chiastic," which is a cross-wise relationship between opposition and ambiguity.
3. To understand that every theory of architecture that has been developed over time has to deal in one way or another with such doubled, chiastic foundations, and that all architecture theories have to position themselves within this framework.
4. To understand that all theorists, designers, critics, and students of architecture can therefore, at any time and in any period, freely engage in the positioning of their profession within this framework, provided that they are fully aware of the enormous range of thought implied in architecture's internal structure.
5. To understand that theory, by its very nature, relies on philosophy, that is, on the art of creating concepts. Thought is not a seeking of truths, but a skill or, as the ancient Greeks called it, a *technē*, a technique.

Learning Objectives

Note: For all M. Arch courses, see also "Professional Standards Addressed"

Students who successfully complete the course will be able:
1. To think *freely*, that is, to think in in an open-minded, confident and structured way. (Please note that thinking is the opposite of having an opinion.)
2. To think *precisely*, that is, to think with the awareness that concepts, language and theories have a long history and structure thought as an extended field rather than as a single idea.
3. To think *rigorously*, that is, to think while trying to make terms as clear as possible, especially when such terms are ambiguous.
4. To think *diagrammatically*, that is, to think with tools and techniques that allow concepts, statements, and images to intersect with each other on a plane filled with traces, borders, and arrows.
5. To think *independently*, that is, to be able to construct ideas about architecture while maintaining a position outside of any school of thought or ideology.
6. To think *professionally*, that is, to think with the instruments of thought based on study, experience, and training.

Course Requirements and Deliverables

The course consists of lectures delivered by Professor Spuybroek, alternating with student presentations and class discussions. This works as follows:
a. The lectures follow a structure of six double sessions, for a total of twelve lectures, each covering one of the double topics. The lectures are divided into two blocks. The first starts off with a general introduction, followed by the lectures on Organon/Pharmakon, Habit/Inhabit and Space/Room, while the second block covers the dual themes of Matter/Form, Design/Machine, and Ornament/Pharmakon. (See the "Course Schedule" below for exact dates.)
b. Each double lecture consists of six modules accompanied by multiple readings (with a few exceptions where no reading is required) that make up the set of readings for each dual theme.
c. Students will form eightteen study groups of four (sometimes more, depending on the total number of students) using the Excel file provided by the instructors on Canvas. Students are free to form groups with whomever they wish during the first week of the semester. This will result in eightteen study groups that will be randomly assigned to two of the six dual themes: *groups 1-6 will be assigned to the Organon/Pharmakon and Matter/Form readings, groups 7-12 to Habit/Inhabit and Design/Machine, and groups 13-18 to Space/Room and Ornament/Pharmakon*.
d. Students will complete three so-called "theory diagrams," two as part of their study group with due dates in week 7 (Feb. 21) and week 16 (Apr. 23), and one individual diagram at the end of the course, due in week 17 (April 30). (See "Required Texts/Readings/Special Materials" for an explanation of a theory diagram.)
e. On the scheduled dates, study groups will give presentations on the drafts of their theory diagrams. These

presentations are intended to prepare each group for the actual submission of such a diagram. They should be well preprared and presented by the group to the class in a 10-minute talk, accompanied by a pdf file. This will be followed by a 10-minute discussion on stage. Pdfs must be uploaded to Canvas in advance. There will be three such presentations and discussions in each session. (See the "Course Schedule" below for exact dates.)

Assignments are weighted as follows:

- Attendance: 10% (during each session, we will call out a number of randomly selected names)
- Presentations: 20%
- Theory Diagrams 1, 2, and 3: 20%, 20&, and 30% respectively

Required Texts/Readings/Special Materials

Each dual theme is accompanied by several texts for students to choose from. Each student in a study group will select *one text* (or more) from this set of readings to collect a number of quotations to include in the group's theory diagram. (Each theory diagram should contain the material from multiple texts.) The study group will create two of such theory diagrams over the course of the semester. In addition, individual students will create their own theory diagrams at the end of the semester, using material from *five texts* selected from any dual theme that the student sees fit. What exactly a theory diagram is will be explained in the introductory lecture on Jan. 6, but it is essentially a large geometric network (consisting of lines, borders, arrows, etc) of textual material and selected images that form small groups that can be positioned in the diagram as a single elements, as doubles in opposition to each other, or in larger series to create a large map of thought. Instructors will make a large collection of such theory diagrams available on Canvas as examples for students.

Instructional Methods

Course information (syllabus, calendar, assignments) and announcements will be posted on Canvas. Pdfs of the lectures will be posted as appropriate. All reading material, the syllabus and its updates, and all the necessary communications will be organized through Canvas.

Course Schedule

Week 1

Tue	01.12	Introductory Lecture, start formation of 18 study groups of students using Excel file.
Thu	01.14	Lecture 1: Organon/Pharmakon I
Fri	01.15	End formation of study groups. Dividing 18 study groups randomly over the dual themes.

Week 2

Tue	01.19	Lecture 1: Organon/Pharmakon II
Thu	01.21	Lecture 2: Habit/Inhabit I

Week 3

Tue	01.26	Career Fair
Thu	01.28	Lecture 2: Habit/Inhabit II

Week 4

Tue	02.02	Lecture 3: Space/Room I
Thu	02.04	Lecture 3: Space/Room II

Week 5

Tue	02.09	Three presentations Organon/Pharmakon teams 1-3
Thu	02.11	Three presentations Organon/Pharmakon teams 3-6

Week 6

Tue	02.16	Three presentations Habit/Inhabit teams 7-9
Thu	02.18	Three presentations Habit/Inhabit teams10-12

Week 7

Tue	02.23	Three presentations Space/Room teams 13-15
Thu	02.25	Three presentations Space/Room teams 16-18
Fri	02.26	SUBMIT GROUP THEORY DIAGRAM 1 (midnight)

Week 8

Tue	03.02	Lecture 4: Matter/Form I
Thu	03.04	Lecture 4: Matter/Form II

Week 9

Tue	03.09	*Spring Break*
Thu	03.11	*Spring Break*

Week 10

Tue	03.16	Lecture 5: Design/Machine I
Thu	03.18	Lecture 5: Design/Machine II

Week 11

Tue	03.23	Lecture 6: Ornament/Pharmakon I
Thu	03.25	Lecture 6: Ornament/Pharmakon II

Week 12

Tue	03.30	Three presentations Matter/Form teams 1-3
Thu	04.01	Three presentations Matter/Form teams 4-6

Week 13

Tue	04.06	Three presentations Design/Machine teams 7-9
Thu	04.08	Three presentations Design/Machine teams 10-12

Week 14

Tue	04.13	Three presentations Ornament/Pharmakon teams 13-15
Thu	04.15	Three presentations Ornament/Pharmakon teams 16-18

Week 15

Tue	04.20	*No class*
Thu	04.22	*No class*

Week 16

Wed	04.28	SUBMIT GROUP THEORY DIAGRAM 2 (midnight)

Week 17

Thu	05.06	SUBMIT INDIVIDUAL THEORY DIAGRAM 3 (midnight)

NB: Updated schedules will always be posted on Canvas.

Course Content

Below follows a fully detailed schedule, adding theoretical content to each of the thirty-six modules, with each module linked to a specific reading.

I. Organon/Pharmakon (Jan. 14 and 19)

a. *The Chambers of Thought* – we are developing a theory of architecture, not a history of architectural theories. "Arche-theory" or metatheory means a "theory of theories." Arche-theory is not a theory of the socio-political conditions under which architecture is produced, or of what architects think, but of what architecture thinks independently of its clients, critics, and designers. How and why do thought, language, and architecture make such a fundamental connection? *Readings*: Lars Spuybroek, "Organon/Pharmakon," chapter 1 (§1-§6) of *The Chiastics of Architecture*, draft version in pdf (pp. 1-31).

b. *Language: Lost and Found in Translation* – although architecture cannot be called a language as a reservoir of meaning or communication (Jencks), the two have much in common: both are millennia old, anonymously collective, wholly rule-based, and fundamentally self-referential. Like language, architecture is in dialogue with itself. What is understanding?—a form of translation. *Readings*: George Steiner, chapters 1 and 2 (partially) of *After Babel* (pp. 32-97), or: John Caputo, chapter 3 and 4 of *Hermeneutics* (pp. 87-141), or: Jorge-Luis Borges, *The Garden of Forking Paths* (pp. 65-128).

c. *Weak Logic and Speculative Grammar* – in Aristotle's *Organon* logic and grammar are the first two disciplines of what was later called the Trivium, the two categories that stabilize the interior structure of the *Organon*. Different types of reasoning, from deductive and inductive to abductive and transductive—what about seductive reasoning? Speculative grammar studied in the context of Wren's fifty-two churches for London and Palladio's system of harmonic rules. *Readings*: Stiny and Mitchell, "The Palladian Grammar" (pp. 5-18) and Vitruvius, *On Architecture*, Book I, chapters 1-3 (pp. 6-35), or: Charles Sanders Peirce, chapters 3 and 4 of *Reasoning and the Logic of Things* (pp. 146-180).

d. *The Sweetness of Rhetoric* – the third discipline of the Trivium is outwardly oriented. Rhetoric is the art of persuasion (from the PIE root *–swad*, "sweetening") and makes specific use of figuration, the realm of metaphor and chiasmus. Rhetoric is the art of translations and transpositions: gestures. According to Aristotle, rhetoric is the counterpart of dialectic. Why and how Vitruvius applied the rules of Ciceronian rhetoric. McLuhan on the trivium and analogical thought. Two types of sweetness: the cute and the gothic. *Readings*: Marshall McLuhan, chapter 1 of *The Classical Trivium* (pp. 13-74), or: Richard McKeon, chapter 1 of *Rhetoric* (pp. 1-24), or: Caroline van Eck, two chapters on architecture and rhetoric.

e. *Chiastics, X-shaped Thought* – when dialectics is a form of dialogue, a back-and-forth form of reasoning, rhetoric is authorial and stands alone. Chiastics attempts to include both rhetoric and dialectics: all the tools of architectural thought can be reversed. Macbeth's chiastic structure: "fair is foul, and foul is fair." A string of examples—Chartres cathedral, Leonardo's equipoise, and the figure of contrapposto—leads us to Merleau-Ponty's chiasm. *Readings*: Maurice Merleau-Ponty, chapter 4 of *The Visible and Invisible* (pp. 130-55), or: Marjorie Garber, *Shakespeare After All*, chapter "Macbeth" (pp. 695-723), or: Lars Spuybroek, chapter 1 of *Grace and Gravity* (pp. 1-33),

f. *Pharmakon: Gift and Poison* – the ancient Greek term *pharmakon* ("drug") applied to technical objects (Stiegler) means that every tool implies both use and abuse, not as opposites but as continuous. Measure and addiction translated as the adoption and adaption of tools. Chiastics is the mode of thought in which organon and pharmakon reinforce each other. Rhetoric in Plato's *Phaedrus* and the two horses of the soul. Derrida on Plato, Stiegler on Derrida. *Readings*: Heidenreich and Weber-Stein, "Bernard Stiegler: Elements of Pharmacology" (pp. 87-108), or: Jacques Derrida, "Plato's Pharmacy" (pp. 61-119), or: Plato, *Phaedrus* (pp. 506-556).

II. Habit/Inhabit (Jan. 21 and 28)

a. ***Habit, to Be Able*** – to study habit, we take a close look at two nineteenth-century philosophers. For Felix Ravaisson it is a receding of consciousness, while for Friedrich Nietzsche it is as important to cultivate habits as to break with them. Habit as second nature—why is a habit also a garment? Why do 'habit' and 'able' have the same etymological root? How does habit differ from what architects call program? How does habit relate to play, and play to habit? *Readings*: Clare Carlisle, chapter 1 of *On Habit* (pp. 1-35), or: Félix Ravaisson, *Of Habit*, preface and the editor's introduction" (pp. vii-21).

b. ***Rhythm and Rhythmanalysis*** – on the morality and ethics of architecture. Since habits are periodic, they exist primarily in time, but divide time into blocks, like "cooking," "shopping," "taking a walk," or "having a garage sale". Gaston Bachelard and Henri Lefèbvre, two great analysts of space, advocated a "rhythmanalysis," a listening to the rhythms of behavior and action. What do rhythms of activities tell us about how things happen? Habit as garment, dressage as dressing. *Readings*: Henri Lefèbvre, chapters 2-4 of *Rhythmanalysis* (pp. 19-45), or: Lars Spuybroek, chapter 2 (first part) of *Grace and Gravity* (pp. 35-52), or: Gaston Bachelard, chapters 1 and 2 of *The Poetics of Space* (pp. 3-73).

c. ***Happiness and Happenings*** – is it possible to think of architecture as an "art of happiness," as Alain de Botton does? We will take a close look at what happiness is, its relationship to the verb "to happen". The Stoic notions of *oikeiosis* ("appropriation") and *eudaimonia* ("living well"), respectively being connected to *oikos*, "house," and to domestic and tutelary spirits, "well-spiritedness". Most of the time things offer support, but they can suddenly turn against us: mislaying, breaking, forgetting, and losing things. Things create linkages between spaces that are separated, says Emanuele Coccia, who adds that being happy means being a twin to things. For Lefèbvre the architecture of happiness is the pure thingless field of the beach. *Readings*: Henri Lefèbvre, chapters 3 and 4 of *Towards an Architecture of Enjoyment* (pp. 32-59), or: Gaston Bachelard, chapters 3, 4 and 5 of *The Poetics of Space* (pp. 74-135), or: Emanuele Coccia, chapters 4-6 of *Philosophy of the Home* (pp. 56-100).

d. ***To Inhabit, to Enable*** – to what extent do we actually "have" (*habere*) habits? Are habits not simply "enabled," the etymological synonym for "inhabited"? As we inhabit architecture, are we not likewise inhabited by architecture? If so, how would that work? We'll do a brief study of Heidegger's notions of *wohnen* and *bauen*. What do we mean when we speak of understanding, thought or language as forms of inhabitation? Home, housekeeping, and homemaking. The English word for "furniture" and its German counterpart *Möbel*. Our mobility compared to that of things. *Readings*: Martin Heidegger, chapter 4 of *Poetry, Language, Thought* (pp. 143-59), or: Emanuele Coccia, chapters 1 and 2 of *Philosophy of the Home* (pp. 1-38), or: Roland Barthes, *How To Live Together* (pp. 3-56).

e. ***Trash and Waste, Dust and Stuff*** – there is a specific pathology of inhabitation that extends in two opposite directions: one toward cleaning and order, the other toward clutter and hoarding. What are the differences between trash, waste, dust, and stuff? When to discard and when to store? Why does the US have so many private storage buidings? The relationships between habit, habilitate, rehab, and the French *habiller*, "to dress". *Readings*: Marie Kondo, chapters 1, 2, and 5 of *The Life-Changing Art of Tidying-up* (pp.1-62, 173-205), or: Becca Rothfeld, chapters 1-3 of *All Things Are Too Small* (pp. 1-55).

f. ***Automatisms and Automation*** – to understand the pharmakon of inhabitation we should look at both sides of automation: the outsourcing of human activity to technology, and the subconscious state of mind so valued by the Surrealists. Why is the word "service" related to "slave"? The two faces of comfort: support and death (Baudelaire). Rococo and the invention of the pillow. Reading Tolstoi on his daily routines … The magic of architecture: unseeing the seen, seeing the unseen. *Readings*: Samuel Butler, chapters 1 and 2 of *Life and Habit* (pp. 1-42), or: Lars Spuybroek, chapter 4 of *Grace and Gravity* (pp. 115-159), or: Sigfried Giedion, part IV of *Mechanization Takes Command* (pp. 364-88).

III. Space/Room (Feb. 2 and 4)

a. *Space: Crystalline and Fluid* – we speak generally of two types of space. The first is gridded, Cartesian, and divided into x-, y-, and z-coordinates, though with a fundamental origin point (0,0,0) that strongly relates to the body. The Greek and Roman use of the *groma*, the centuriation of the land by the military. The mapping and measuring device becomes the design and building device. The second type of space is inseparable from time, fluid and takes on the shape of a landscape, similar to what scientists call "fields." What do physicists mean with a "field theory" of gravity or electro-magnetism? Why do our notions of space always involve metaphors of the body and the landscape? Navigating landscapes and night skies with the art of wayfinding. *Readings*: Tim Ingold, chapters 11 and 13 of *The Perception of the Environment* (pp. 189-208, 219-42), or: Georges Perec, *Species of Spaces* (pp. 2-92).

b. *Interval or Interstitial?* – a small, but essential change occurs in our concept of space: it turns into an internal organizing quality. Words and sentences are "spaced," things are organized by intervals; some speak of liminal or interstitial space. The emptiness of atoms, the uncertain locations of their internal parts, the porosity of matter: there is as much space in matter as outside of it. All machines and games are based on such internal hollowness. The Japanese notion of *ma*, and the merging of body and landscape in Chinese medicine, *neijing-tu*, the "inner landscape." *Readings*: Peter Heft, "Betwixt and Between" (pp. 1-20), or: Louis Komjahty, "Mapping the Daoist Body, Part I and II" (pp. 1-57).

c. *Weltinnenraum* – we analyze two poems by Rainer Maria Rilke, where birds fly through an inner space that extends throughout all the world. Space has now become fully interior; everything is consciousness. What exactly is this *Weltinnenraum*, this "world inner space" or "world interior"? Rilke's *Lautlogik* ("sound logic"): atmosphere and ambiance, of which the root *ambire* means "to go around" or "encircling". The importance of embracing (*umarmen*) in both poems versus the notion of a surroundings (*Umwelt*), which are not given a priori. *Readings*: Rainer Maria Rilke, "Es winkt zu Fühlung" and "Durch den sich Vögel werfen" (requires a basic understanding of German and a comparative analysis in English) and Paul de Man, chapter 2 of *Allegories of Reading* (pp. 20-56).

d. *Room: Field and Hold* – the fascinating etymology of the word "room" shows us its two meanings: one is the "open field" (Latin *rus*), the other the "hold," the enclosed space of a ship (Dutch *ruim*). Room is also "wiggle room," in German *Spielraum*, "room to play." Field and yard. *Spiel* (play): the etymology of spilling and wasting. Heidegger's jug analysis: holding (*fassen*) and pouring (*schenken*, lit."to give"). The paradox of the gift: keeping and giving. *Readings*: Lars Spuybroek, chapter 2 of *Grace and Gravity* (pp. 35-73), or: Martin Heidegger, chapter 4 and 5 of of *Poetry, Language, Thought* (pp. 141-184).

e. *Lordship and Bondage* – space now seems to double up into the space between the walls and in the walls, what we call poché (lit. "pocket" or "pouch"). We compare Louis Kahn's distinction between served and servant space to Hegel's lordship and bondage, the dialectical opposition that drives history. Aristocracy and poché. What drives architectural history?—chiastics. The chiastic history of domesticity: slaves, butlers, manservants, housewives, electrical appliances, and digital home automation (Alexa). The chiastics of over- and empowering illustrated by two movies: *The Servant* and *Parasite*. *Readings*: Lars Spuybroek, "Matter and Image: The Pharmacology of Architecture," *Architectural Intelligence* (pp. 1-20), or: Francis Fukuyama, chapters 17-19 of *The End of History and the Last Man* (pp. 181-208).

f. *Games Are Games of Ways* – we now begin to understand that space is not about positions, but about ways. There are always more ways than positions. Looking at gameboards shows us the importance of poché. Games, play, and fantasy: Why is poché the space of monsters (*Alien*), fantasy (*Narnia*) and ghosts (*Hell House*)? Oulipo and fantasy: Georges Perec and Italo Calvino. Gameboard and drawing board, poché opens up to the field: Constant (*New Babylon*), Cedric Price (*Fun Palace*), and J.G. Ballard ("Thousand Dreams of Stellavista"). *Readings*: Roger Caillois, chapters 1 and 2 of *Man, Play, and Games* (pp. 3-36), or: Johan Huizinga, chapters 2 and 3 of *Homo Ludens* (pp. 28-75), or: Gillian Beer, chapters 1 and 2 of *Alice in Space* (pp. 27-73), or: Italo Calvino, *Invisible Cities* (the whole novel).

IV. Matter/Form (March 2 and 4)

a. *Matrix, Mater, and Matter* – matter contains the same etymological root (*mat*) as matrix, meaning "womb," and mater, meaning "mother," both words referring to the generative process of matter taking on form or matter being formed. Does matter find form or does form find matter? Hylomorphic or hylozoic? Seed and womb: more metaphors of father and mother. Plato on the receptacle (*hypodochē*) in the *Timaeus*. Aristotle on potentiality (*dynamis*) and actuality (*energeia*) in the *Metaphysics*, and on the four causes in the *Physics*. We find that matter always implies form, and form formation. *Readings*: Aristotle, *Physics*, Book II, chapters 1-3 and *Metaphysics*, Book IX, chapters 1-7, or: Rainer Maria Rilke, *On Auguste Rodin* (pp. 31-88).

b. *Form and Formation* – we study the two opposing models of form: Plato's Theory of Forms in which material shapes are merely poor copies of heavenly *eidē* (idea, type), and the Romantic model of *Bildung*, growth and formation (Goethe, Schelling). "Matter is movement," said Denis Diderot. We'll have a look at the work of two architects who used matter to find form: Antoni Gaudi and Frei Otto. It now becomes clear that formation operates on information. *Readings*: Denis Diderot, *D'Alembert's Dream* (pp. 149-185), or: Jos Tomlow, *Gaudi's Hanging Models* (pp. 12-94), or: Gould & Gould, chapter 6 and 7 of *Animal Architects* (pp.147-220).

c. *In-formation* – "the notion of form should be replaced by that of information," said the French philosopher of technology Gilbert Simondon. We will ask ourselves what the notion of information means, especially in the context of the matter-form argument and its relation to entropy and noise. Now it becomes clear that information always involves transformation. *Readings*: Tim Ingold, chapters 1-4 of *Making* (pp. 17-32), or: Gilbert Simondon, chapter 1 of *Individuation in Light of Form and Information* (pp. 21-54), or: Gregory Bateson, "Form, Substance, and Difference" (pp. 90-104).

d. *Trans-formation* – one of the most beautiful theories of architecture is Gottfried Semper's "principle of dressing" (*Bekleidungsprinzip*) in relation to what we will translate as the "transformation thesis" (*Stoffwechselthese,* lit. "stuff-change-thesis" or "metabolism-thesis"). Why does architecture have such a fundamental relation to textile? Not only because of the notion of shelter or fashion, but more because of textile's structural understanding of figuration. The rhetoric of textile. How does fabric transform into stone? And now it becomes clear that transformation is in fact transfiguration. *Readings*: Gottfried Semper, section 5 of "The Four Elements of Architecture" (pp. 101-26), or: Lars Spuybroek, chapter 2 of *The Sympathy of Things* (pp. 53-106).

e. *Trans-figuration* – at some point Semper suddenly speaks of the transformation thesis as "the mystery of transfiguration." What exactly is transfiguration and how does architecture transfigure itself? Matter turning into image, image into matter. We will take our time machine and go back 30,000 years to visit the caves of Altamira and Cougnac to gain a better understanding. And why not ask the shamans who perform their rituals there what transfiguration is? The material changes in the domestic environment: from textiles to stone to wood to plastics to the overwhelming presence of metal. Matter is never literal, but figural. *Readings*: Gottfried Semper, paragraphs 49 to 62 of *Style* (pp. 218-55), or: Lars Spuybroek, chapter 3 (partially) of *Grace and Gravity* (pp. 75-99), or: Caroline van Eck, "Figuration, Tectonics, and Animism in Semper's *Der Stil*" (pp. 1-14).

f. *The Stucco Angel* – *where* are we when we knead the dough, when we shape the clay, when we saw off a plank, when we pour the red-hot iron into the mold? Skills are a form of rhetoric, a combination of gesture and transformation. Our chiastic relationship with matter, we inhabit matter as it inhabits us. We will study *the brilliance of matter*—the wetness of stucco and concrete, the porosity of stone, the fibrousness of wood, the incandescence of steel—because it selects specific modes of inhabiting: images. Matter/Form becomes Matter/Mind: pharmakon, alchemy, and individuation. *Readings*: Lars Spuybroek, "Matter and Image: The Pharmacology of Architecture," *Architectural Intelligence* (pp. 1-20), or: Lars Spuybroek, chapter 3 of *The Sympathy of Things* (pp. 107-156).

V. Design/Machine (March 16 and 18)

a. ***Things*** – with things we enter the realm of philosophical realism (*realis*, *res*): what is a thing? Things are much more than objects. They can be a habit, as in "you can do your thing"; or an event, as in "things are going on"; or an issue, as in "things need to be discussed." Cause, case, *chose*, *Sache*, sake, thing, Althing, *Ding*—all related. In opposition to Aristotle's separation of substance and accident, we will merge the two: things that happen. Things cause things, but the causes are not what things "are for." How to design things then? Does intentionality explain what things are?—no, things are far more than their intentions. *Readings*: Martin Heidegger, chapter 5 of *Poetry, Language, Thought* (pp. 161-184), or: Steven Shaviro, chapters 3 and 4 of *The Universe of Things* (pp. 45-84), or: Vilém Flusser, the first part of *The Shape of Things* (pp. 17-57).

b. ***Schema and Rhythmos*** – for Kant, things can only be real if there is a schema of them; and schema belongs to the reductive side of Plato's Idea, it reasons deductively from the whole to the parts. Or does it? *Schēma* is the ancient Greek term for "form" and is closely related to *rhythmos*. According to Petersen, *rhythmos* does not mean "flow," but "trace," "train," or "trait." Rhythmos (and Vitruvian *eurhythmia*) suggests the possibility of a reverse type of reasoning, from the agency of parts to the whole. How do we map the possible movements of the parts? Displacement (external) and change (internal). Is it a game? *Readings*: J. J. Pollitt, "rhythmos" and "schēma" of *The Ancient View of Greek Art* (pp. 218-28 and pp. 258-62), or: Lars Spuybroek, chapter 2 (first part) of *Grace and Gravity* (pp. 35-52).

c. ***Diagram and Code*** – the diagram is the opposite of reductive, namely the generative notion of the schema and actively engages matter. Diagrams are fundamentally games, the reason why are generals and football coaches the best drawers of diagrams. The strategic and machinic. Diagrams in weather reports, in choreography, in electronic music, in the work of Marcel Duchamp: arrows. The rise of the diagram in architecture: Christopher Alexander and Peter Eisenman. Frei Otto and the material diagram. Analogue and digital computing. What is code? Is it the ancient "Book of Nature"? Back to *logos*, words as instructions. *Readings*: Gilles Deleuze, chapters 12 and 13 of *Francis Bacon* (pp. 99-121), or: Lars Spuybroek, "NOX Diagrams" (pp. 270-281) and "The Structure of Vagueness" (pp. 131-147).

d. ***"Let us calculate!"*** – said Leibniz. How is it that form and even thought can be calculated? We will trace this idea from the *Sefer Yetzirah* ("Book of Formation") to the *ars combinatoria* of Ramon Llull and Gottfried Leibniz, all the way to the thinking machines of Charles Babbage and Alan Turing. What exactly is the difference between calculation and computation? Are computers logical machines or rhetorical machines? Again, the looping of logic, grammar, and rhetoric. Jimi Hendrix and the rhetoric of technology. Electric and electronic. *Readings*: George Dyson, chapters 2 and 3 of *Darwin Among the Machines* (pp. 15-51), or: Mario Carpo, chapter 2 of *The Second Digital Turn* (pp. 9-98), or: Umberto Eco, chapters 14 and 15 of *The Search for the Perfect Language* (pp. 269-318).

e. ***Deep Learning and Deepfakes*** – moving from idea to schema to diagram to code offers us a revealing insight into the nonhuman aspects of design and the subsequent emergence of generative algorithms and AI. The ethics of forging and fabricating: some thoughts on the nature of simulation. Emulation and simulation. AI and fake Jazz, Stiny's "fake Palladios". AI may soon be playing the Imitation Game with us: instead of us trying to figure out who the machine is, the machine will have to figure out who's the human and who's the AI. *Readings*: Neil Leach, chapter 1 of *Architecture in the Age of Artificial Intelligence* (pp. 15-40), or: Mario Carpo: chapter 3 of *Beyond Digital* (pp. 79-128).

f. ***Dashboards, Moodboards, and Gameboards*** – metadesign: we design and also design the code. Today we have to dive deeper and deeper into the DNA of architecture itself. The social difference between private scripting and public algorithms and AI. Artificial intelligence is pure rhetoric, things speaking publicly. Screens and boards: what does it mean to share on social media? We find collective boards everywhere: gameboards, whiteboards, message boards, dashboards, evidence boards, keyboards, storyboards, switchboards, and moodboards. We are pilots operating vehicles on the

technical plains of intelligence. *Readings*: Ian Bogost, chapters 1 and 4 of *Play Anything* (pp. 1-26, 91-120), or: Vilém Flusser, chapters 3 and 4 of *Vampyrotheutis Infernalis* (pp. 27-68), or: John Perry, *Jimi Hendrix's Electric Ladyland* (the whole book).

VI. Ornament/Pharmakon (March 23 and 25)

a. ***Readiness and Readiscapes*** – Heidegger reasoned things from the standpoint of readiness (*Zuhandenheit*) as a form of concealed serviceability (*Dienlichkeit*). Concealed, really?—only from the viewpoint of human consciousness, not from that of things. Things flicker, shine, and radiate. Ornament and machines have the same meaning: the Latin *orno* and *apparatus* both mean "making ready." Architecture, the art of readiness. *Readings*: Lars Spuybroek, chapter 3 of *Grace and Gravity* (pp. 75-114), or: Georg Simmel, "Fashion, Adornment, and Style" of *Simmel on Culture* (pp. 187-217), or: Lars Spuybroek, "Charis and Radiance" (pp. 119-149).

b. ***Hypergon, Not Parergon*** – Warburg used Alberti's words to define ornament: *afficti et compacti*, applied and attached. In that view, ornament is merely by-work, *parergon*, and "depends" ("hangs from") on structure. Using the same example as Warburg, Botticelli's *Birth of Venus*, we come to the opposite conclusion: *hypergon*, over-worked. Figuration and figures of speech: ornament is the classic tool of rhetoric—it precedes the logic and grammar of structure, and is not attached to it afterwards. *Readings*: Lars Spuybroek, "Shining and Automation: The Phenotechnology of Ornament," *Architecture Research Quarterly* (pp. 223-236), or: Lars Spuybroek, chapter 1 of *The Sympathy of Things* (pp. 1-51).

c. ***The Noise of This World*** – the link between the Greek *kosmōs* and cosmetics has generally been attributed to "order." Again, we will approach it from the opposite angle: it's pure noise, that is, pure entropy. Why does language need noise? Why does the universe need noise? Polychromy and polyphony. The Indian Holi festival. The wonderful poems by Gerard Manley Hopkins: "dapple-dawn-drawn" (*The Windhover*)! His scholastic realism (cf. instress and inscape) compared to magic realism. *Readings*: Ananda Coomaraswamy, chapter 3 of *Figures of Speech or Figures of Thought?* (pp. 71-83) and Spyros Papapetros, "World Ornament" (pp. 309-329).

d. ***Tattoos and Graffiti*** – at the very beginning of Modernism, Adolf Loos made the deceptive argument that linked ornament to crime. Why was ornament lost in architecture?—the link with the "Protestant nature of capitalism" (Max Weber), parsimony vs liberality. We will reread Semper and, for the third time, come to a radically opposite conclusion than Loos: tattoos are monuments, and monuments are the very basis of public life. Whereas tattoos are slow and permanent, graffiti is fast and temporal. Tattoos *on the body* and graffiti *of the body*. Why do they both have a transgressive relationship with the legality of the public sphere? Border crossings: translation, transfiguration, and transgression. *Readings*: Alfred Gell, chapter 6 of *Art and Agency* (pp. 73-95).

e. ***Aglaea and Hephaestus*** – at the heart of technology we find the marriage between Aglaea (head of the Three Graces, lit. meaning "shining") and the club-footed Hephaestus, maker of robots and ornaments alike. How is the radiance of the one related to the self-movement of the other? Labor and elaboration: we will understand things now as over-worked, abundant and redundant. Things necessarily exist in a state of surplus, they are gifts, always slightly too-much. *Readings*: Lars Spuybroek, "Shining and Automation: The Phenotechnology of Ornament," *Architecture Research Quarterly* (pp. 223-236).

f. ***Pharmakon, again*** – the true meaning of the word *pharmakon* lies in its relationship to gift exchange. The English word "gift" means "poison" in German. Why do so many authors (Sacks, Klüver, Weir Mitchell, Huxley, Michaux) associate drug experiences with ornament? What exactly does a pharmacology of architecture involve? The magic of architecture: ornament is not attached to the wall, it enters through the wall, from the realms of poché. *Readings*: Aldous Huxley, *The Doors of Perception/ Heaven and Hell* (pp. 1-62), or: Charlotte Perkins, *The Yellow Wallpaper*.

NB. Changes in topics or readings will be announced, but please check Canvas regularly for the latest version of the syllabus.

Assessment

The following criteria will be used to evaluate the student's performance:
(a) the criterion of understanding (1): How do authors present their argument, lineary or nonlineary?
(b) the criterion of understanding (2): Authors present their argument in a context or a specific field of interest, please be aware of this as it may mean additional reading.
(c) the criterion of clarity: How is your argument presented? How is the theory diagram constructed?
(d) the criterion of creativity: How does the theory diagram combine images, quotations, and geometric tools?
(e) the criterion of personality: Do the readings of the text and the design of the theory diagram reflect a personal point of view and how is this incorporated into the work?
(f) the criterion of commitment: Has the student shown a particular eagerness to develop ideas, to participate in discussions, or to demonstrate a particular talent for theory?

No incompletes will be given without adequate reason or without a prior discussion with the student by the instructor, either individually or in groups. All assignments must be completed in order to receive a passing grade in the course. Incompletes will be only be given in exceptional circumstances. In addition, students are required to complete the online course evaluation for all Georgia Tech courses at the end of the semester.

Supplemental Information *(required for all M. Arch courses)*

Professional Standards Addressed
NAAB Conditions for Accreditation
For Professional Degree Programs in Architecture (2020)

The accredited degree program must demonstrate that each graduate possesses the knowledge and skills defined by the criteria below. The knowledge and skills defined here represent those required to prepare graduates for the path to internship, examination, and licensure and to engage in related fields. The program must provide student work as evidence that its graduates have satisfied each criterion.

The criteria encompass two levels of accomplishment:

- *Understanding*—The capacity to classify, compare, summarize, explain, and/or interpret information.
- *Ability*—Proficiency in using specific information to accomplish a task, correctly selecting the appropriate information, and accurately applying it to the solution of a specific problem, while also distinguishing the effects of its implementation.

Program Criteria (PC) and Student Criteria (SC): The NAAB establishes PC and SC to help accredited degree programs prepare students for the profession while encouraging education practices suited to the individual degree program.

For the purpose of accreditation, while this course will cover more criteria than the ones listed below, the following will be actively covered:

PC.4 History and Theory—How the program prepares students to understand the histories and theories of architecture and urbanism, framed by broad social, cultural, economic, and political forces.

COURSE POLICIES

Academic Integrity and Conduct

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. All Georgia Tech students should familiarize themselves with and abide by the Georgia Tech Honor Code: https://catalog.gatech.edu/rules/17/. Faculty shall report instances of academic dishonesty to the Office of the Dean of Students.

For expectations of student and instructor conduct more generally, consult section 18 of the catalog listed above, entitled "Code of Conduct," https://catalog.gatech.edu/rules/18/, and section 22, entitled "Student-Faculty Expectations," at https://catalog.gatech.edu/rules/22/.

All persons in the classroom are expected to behave with courtesy towards others and in a way that does not interfere with the regular conduct of the class. Cell phones are to be turned off when students enter the classroom and should remain off for the duration of class; laptop computers are to be used only for taking notes; and students should not engage in private conversations while the instructor or other students are speaking. Anyone who does not adhere to these basic courtesies will be asked to leave.

Accommodations for Students with Disabilities

Any student with a disability, that may require accommodation, should contact the Office of Disability Services at 404-894-2563 or visit http://disabilityservices.gatech.edu to make an appointment to discuss their special needs and obtain an accommodations letter. They should also schedule an appointment to speak with the course instructor to discuss their learning needs.

Active Participation/Attendance

Active participation in all class meetings (lectures, student presentations and discussions) is mandatory and essential for successful completion of the course. Absences will be excused only for medical or family emergencies or for Institute-approved events and religious holidays documented in writing. (Under a new policy, you must notify your instructor in writing during the first two weeks of the semester of any anticipated absences for religious holidays.) Late arrivals will be counted as absences. Two absences will result in a grade reduction, four absences in a further grade reduction, and more than four absences will result in a failing grade. Absences from your own group presentations will result in an immediate grade reduction and will only be tolerated in exceptional circumstances. NOTE: Absences due to special and/or unforeseen circumstances must be discussed with the Instructor as early as practically possible.

Approved Communication Platforms

https://gatech.service-now.com/home?id=kb_article_view&sysparm_article=KB0023604

Archiving

At the end of the semester, all students are required to submit physical examples of their work and/or digital examples no later than one week after the end of term, to their instructors or administration for archiving. By enrolling, each student grants a license to reproduce and display their work online, in forthcoming print publications, and/or public exhibitions.

College of Design Facility Rules and Guidelines

Please consult the Georgia Tech Student Handbook (https://studentlife.gatech.edu/student-handbook) regarding the use of facilities and all Institute policies. Aerosol sprays of any kind are strictly banned from the studio and surrounding areas. A spray-painting booth is now in operation in the College of Design shop on the ground floor of the East Architecture Building.

Course Expectations & Guidelines

Per the GT Catalog (https://catalog.gatech.edu/colleges/coa/architecture/#text), all work produced in the College of Design as part of a degree program becomes the property of the College; it may be retained or returned at the discretion of the faculty. The faculty of the School of Architecture also reserves the right to refuse for credit any project executed outside the precincts of the College or otherwise produced without proper coordination with the faculty.

The course will proceed with a general expectation that students will conduct themselves as soon-to-be professionals, that is to say, acting responsibly, completing work in time, and maintaining respect towards all the class participants, and making possible adjustments for unforeseen situations that can sometimes arise. Any problems of conduct will be addressed individually, and appropriate remedial measures taken, subject to the general institute guidance.

Digital proctoring

Students are allowed and encouraged to make use of AI software in the design of their theory diagrams. However, we expect their use to be part of the conceptual and creative development of the work, and to be presented in a way that is open to discussion and debate.

Diversity, Equity, and Inclusion

The College of Design community of faculty, staff, and students aspires to create and nurture an environment that is supportive of all backgrounds where different views and ideas are respected and encouraged. In all our pursuits, we commit to justice, diversity, equity, and inclusion with regard to race, national origin, language, age, sexual orientation, gender, religion, and ability. Moreover, we will encourage intellectual inquiry and respectful exchange that cements our dedication to these principles.

Emergencies

In case of emergency (e.g., fire, accident, or criminal act), please call the Georgia Tech Police at 404-894-2500. Please note that Perry Minyard, IT Support Administrator for the College of Design, is also a firefighter and an Emergency Medical Technician (EMT) certified in performing CPR.

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Any assignment missed by a student group will be noted and may influence the grade of all group members. Any theory diagram submitted to Canvas after its due date will face a penalty. A 10% deduction will apply to diagrams submitted a day late, 20% to diagrams submitted two days late, 30% to diagrams submitted three days late, and 40% for any submissions thereafter.

Library & Archives

Need to do research but don't know where to start? Contact your Architecture Library subject specialist, Catherine Manci (catherine.manci@library.gatech.edu), for research help and information on available resources. Contact your Architecture Archives liaison, Jody Thompson (jody.thompson@library.gatech.edu), for assistance with archival research and collections.
Georgia Tech Library website: https://library.gatech.edu/
Georgia Tech Archives website: http://library.gatech.edu/archives

Ownership

Physical copies of student work submitted to the school to satisfy course requirements—including, but not limited to digital files, papers, drawings, and models—become the property of the school. It is assumed as no obligation to safeguard such materials and may, at its discretion, retain them, return them to the student, or discard them.