

## **ARCH 4315-001 + 5315-001**

### **Architecture and Infrastructure: Inside and Outside**

University of Texas at Arlington, Spring 2018 | Th 2:00-4:50 | ARCH 329

Instructor: Dr. Kate Holliday

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Faculty profile

<https://mentis.uta.edu/explore/profile/kathryn-holliday>

Office hours: ARCH 416, Tuesday, 1-3:00

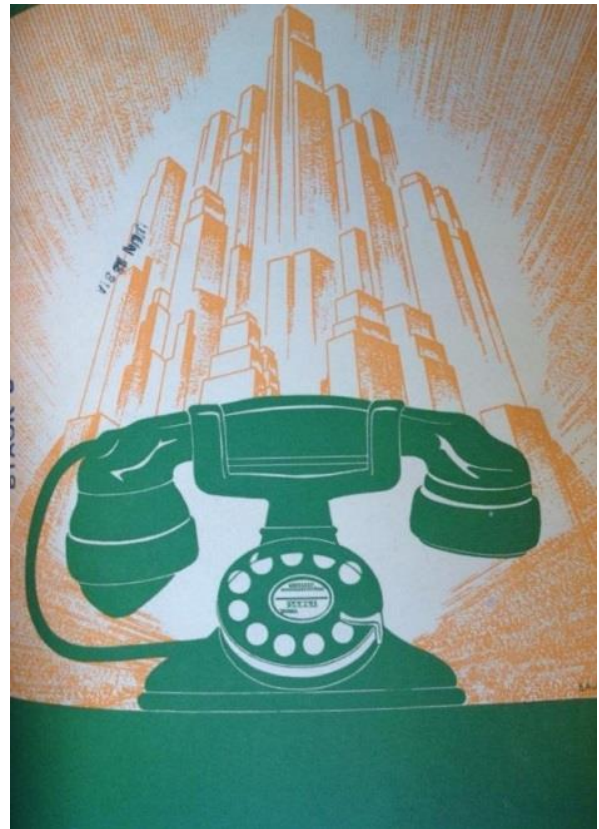
The best way to contact me outside of class is through e-mail but please give me a couple of days to respond – if you haven't heard from me after 48 hours, please feel free to send again. If you cannot come to office hours and would like to chat outside of class, please do schedule an appointment or feel free to drop in if my door is open (as it often is). I genuinely welcome your questions and ideas.

#### **COURSE DESCRIPTION**

This course examines the intersections between infrastructure and architecture since the 19<sup>th</sup> century, looking especially at the ways that buildings enable and shape technological practices. We consider these questions from a number of points of view, some quite literal and others more open-ended. Buildings are dependent on massive infrastructural systems to function within urban, suburban, and rural environments. They are connected through wires, pipes, conduits, highways, and pipelines to each other and to often invisible systems of delivery. While the design of “outside” infrastructural systems is the domain of engineers, architects have taken varied approaches to their integration into the “inside” of buildings. This course asks students to delve into the intertwined history of architecture and infrastructure from the middle of the 19<sup>th</sup> century to the present, looking at the varied ways that architects and engineers have theorized and designed the interconnections between buildings and the technological environment around them. By looking at examples both well known, like Louis Kahn's Richards Medical Research Laboratories, and more obscure, like AT&T's Long Lines buildings across the United States, we will examine how systems have been integrated into architectural settings, both in the design of specialized typologies for delivery and in the modification of existing building types to accommodate more and more complex systems across the past 150 years.

#### **COURSE OBJECTIVES – STUDENT LEARNING OUTCOMES**

Students will develop critical thinking, writing, and research skills by engaging with primary and secondary research sources. Become familiar with concepts and theories in the history of technology and infrastructure as it relates to architecture; be able to apply those concepts to issues pertinent to contemporary architectural practice. Students will develop presentation skills through class discussion and through individual and group oral presentations.



## COURSE FORMAT

This course is a seminar; the instructor will present some material through lecture, but an equal time is given to class discussion of reading and research projects as well as walking tours. Your participation is essential! Come prepared to share your ideas and engage in conversation.

## TEXTBOOKS

Required: Course readings, will be available through Blackboard and should take between 1 and 2 hours per week. Go to <http://elearn.uta.edu> and log in to get access to our course page.

## COURSE EVALUATION

Your grade will be based on 4 short writing assignments, a book review, a book/building review presentation, and a final book/building review. More information on the topics and expectations will be provided in class and through consultation with the instructor. Students must complete all assignments to pass the class. Cheating of any kind on tests or assignments, including plagiarism, copying, collusion, etc. will be grounds for failure of the assignment. Grades are weighted as follows:

Writing assignments 1-4: 10% each

Book review: 15%

Book/building presentation: 15%

Book/building final paper: 20%

Class participation, including attendance, arriving prepared, engagement in discussion: 10%

In general grades are assigned using the following criteria –

A (90-100) = exceptional work, exceeds expectations

B (80-89) = very good work

C (70-79) = satisfactory, meets minimum requirements

D (60-69) = below average performance

F (59 and below) = failing, does not meet expectations

Please note that if your final grade should fall between #9.5 and #0.0, the following rule for rounding will apply: #9.0-#9.4 rounds down to the next whole number #9.5-#9.9 rounds up to the next whole number.

## CLASS POLICIES

**Attendance:** This course covers an enormous amount of material and meets only once per week. Your presence is necessary for learning and engagement and attendance is therefore **required**. More than one absence will be grounds for lowering the final grade by a full letter grade. Please note that I will take attendance at most, though not all, meetings. If you are more than 10 minutes late, you will be counted absent. In the event of a medical emergency, please notify me as soon as possible and be prepared to provide medical documentation. This is the only form of excused absence.

**Late papers:** I do not accept late papers. I expect assignments to be ready at the beginning of class; in many cases you will turn in work both in hard copy and through Blackboard – please refer to the assignment as described on Blackboard. Assignments turned in after class on the same day will lose half a letter grade; assignments turned in the next day will lose a full letter grade and continue to drop one full letter grade per day late.

**Digital citizenship:** We are surrounded by digital technologies from our phones and laptops to watches and headsets. While I do not ban technologies in the classroom, I do require good digital citizenship. What do I mean by this? Do not allow your digital devices to distract you – or others. Use your laptop to take notes – do not use it to watch videos or check facebook during class. If you are near someone who is distracting you with digital technology use, please feel free to move or to ask politely for them to refocus on the classroom. I will also ask you to be responsible users of email – I am happy to answer your questions, but please do not use email as a substitute for paying attention in class and using Blackboard.

**Assignments:**

Additional information about all assignments and how they are graded will be available on Blackboard and in our class discussions.

**Short writing assignments (4):** In general, the short writing assignments will ask you to engage with course readings and classroom activities and ask you to establish a critical perspective on the issues raised. You will be graded on clarity of writing, organization, use of sources to support your position, and creativity of your argument.

**Book review:** Each student will choose one book to read in its entirety from a list provided by the instructor and produce a book review of 1,500 words that summarizes the author's argument, assesses its sources and evidence, and provides perspective on the themes addressed in the book.

**Book/building presentation:** As students read their books, they should consider a building that they feel is particularly relevant. For the 15-minute presentation, students will present both the book and how lessons learned from the book allow assessment of the building chosen by the student.

**Book/building final paper:** Using their initial book review and feedback gained during the presentation, students will complete a final 3,000 word paper that assesses the book and the building together. The final paper should also incorporate sources read and concepts addressed during the semester.

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## **SCHEDULE OF CLASS MEETINGS**

Please note, as the instructor for this course, I reserve the right to adjust this schedule in any way that serves educational needs.

### **Week 1, January 18**

#### **Introduction: Technology, Architecture, and Infrastructure**

**Short writing assignment #1 due next week in class:** Define technological determinism (cite your sources – use the readings). And, with that definition in mind, consider whether your smartphone (or other digital technology you choose) naturally shapes your behavior, or whether you naturally adapt the smartphone to your needs.

### **Week 2, January 25**

#### **Technological Determinism –**

Marshal McLuhan, *Understanding Media*, excerpt available on Blackboard.

Carolyn Marvin, *When Old Technologies Were New* (Oxford University Press, 1990), Epilogue, 232-35.

**Assignment #2 due next week in class:** Go to the library (during *this week's* class). Each of you will browse 1 year of an architecture journal during the decade of the 1920s to look for 1 advertisement and 1 article that focuses on technology and building systems. For next week, scan these advertisements and use them as illustrations for a 500-word essay that considers how technology is represented in architectural practice through media.

### **Week 3, February 1**

#### **Infrastructure, Technology, and the City**

Stephen Graham and Simon Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (Routledge, 2001), 1-12.

available as an ebook: <http://pulse.uta.edu/vwebv/holdingsInfo?bibId=1071547>

Ingrid Burrington, "How to See Invisible Infrastructure," *The Atlantic* (August 14, 2015)

<https://www.theatlantic.com/technology/archive/2015/08/how-to-see-invisible-infrastructure/401204/>

### **Week 4, February 8**

#### **Technological Determinism and the Idea of Modern Architecture**

Sigfried Giedion, *Mechanization Takes Command* (1948), access eBook through Blackboard

**Assignment #3, begin in class and due next week:** Working in teams of two or three, create a series of drawings and diagrams based on visual survey of the outside of the Architecture building. Your drawings should show 1) visible building systems and 2) visible means of connection to infrastructure. You are welcome to visualize, label, and diagram these elements any way you choose – hand-drawing, photographs, video, etc.

### **Week 5, February 15**

#### **Building Technology into the City: The Architecture of Water, Railroad, Electricity**

Carl Smith, *City Water, City Life: Water and the Infrastructure of Ideas in Urbanizing Philadelphia, Boston, and Chicago* (University of Chicago, 2013), excerpt available on Blackboard

Michael J. Lewis, *Frank Furness: Architecture and the Violent Mind* (WW Norton, 2001), excerpt available on Blackboard

Aaron Wunsch, *Palazzos of Power* (Princeton Architectural Press, 2017), 13-64. [mostly pictures and blank pages!]

### **Week 6, February 22**

#### **Making Technology Visible: Architecture and the Telephone Building in America**

Richard Storrs Coe, "Bell System Buildings – An Interpretation," *Bell Telephone Quarterly* (July 1929): 201-17.

Walter Pferd, "NEBS: Equipment Buildings of the Future," *Bell laboratories Record* (December 1973): 359-364.

**Assignment #4 due in class today:** These two readings are both from Bell System publications and are part of the kinds of materials I use when working on my research on telephone buildings. This assignment gives you an opportunity to Coe and Pferd reflect two different approaches to conceptualizing the telephone building.

### **Week 7, March 1**

#### **Integrating Systems**

Reyner Banham, *Megastructure* (Thames & Hudson, 1974), excerpt on Blackboard.

"Hail the Maintainers," <https://aeon.co/essays/innovation-is-overvalued-maintenance-often-matters-more>

**Assignment due in class: Book review due**

### **Week 8, March 8**

#### **Houses of Tomorrow**

Loretta Lance, *Becoming Bucky Fuller* (MIT Press, 2009), excerpt on Blackboard.  
Beatriz Colomina, "Unbreathed Air 1956," *Grey Room* 15 (2004): 28-59.

**Week 9, March 15**

NO CLASS SPRING BREAK

**Week 10, March 22**

Logistics and Technical Space

Scott G. Knowles and Stuart W. Leslie, "Industrial Versailles": Eero Saarinen's Corporate Campuses for GM, IBM, and AT&T," *Isis* 92, n.1 (March 2001): 1-33.

Jesse LeCavalier, *The Rule of Logistics: Walmart and the architecture of Fulfillment* (University of Minnesota, 2016), excerpt on Blackboard.

**Week 11, March 29**

Field Trip downtown Dallas and AT&T / NB this date may change or be cancelled depending on our host's schedule

**Week 12, April 5**

The Smart City

Patrick Sisson, "Your city is watching you," *Curbed*, January 17, 2018.

<https://www.curbed.com/2018/1/17/16897222/machine-learning-urban-planning-sidewalk-labs>

Eleanor Gibson, "Alphabet's Sidewalk labs to create high-tech 'future city' on Toronto waterfront," *dezeen*, 19 October 2017.

<https://www.dezeen.com/2017/10/19/alphabet-google-sidewalk-labs-high-tech-future-city-toronto-waterfront/>

Bang the Table, "Public Engagement with the Smart City," just browse.

**Week 13, April 12**

Book/Building presentations

**Week 14, April 19**

Book/Building presentations

**Week 15, April 26**

Book/Building presentations

**Week 16, May 3**

Conclusions

NO FINAL EXAM

**FINAL PAPER DUE MAY 8 at 5pm**

### Additional University Policies

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

**Disability Accommodations:** UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

**The Office for Students with Disabilities, (OSD)** [www.uta.edu/disability](http://www.uta.edu/disability) or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability).

**Counseling and Psychological Services, (CAPS)** [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

**Non-Discrimination Policy:** *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit [uta.edu/eos](http://uta.edu/eos)*

**Grade Grievances:** Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.

**Title IX Policy:** The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or [jmhood@uta.edu](mailto:jmhood@uta.edu).*

**Academic Integrity:** Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*



UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>

**Campus Carry:** Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

**Student Feedback Survey:** At the end of each term, students enrolled in face-to-face and online classes categorized as "lecture," "seminar," or "laboratory" are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>

**Final Review Week:** for semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Students should subscribe to the MavAlert system that will send information in case of an emergency to their cell phones or email accounts. Anyone can subscribe at <https://mavalert.uta.edu/> or <https://mavalert.uta.edu/register.php>

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at <http://www.uta.edu/universitycollege/resources/index.php>

The Library's 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available

during the library's hours of operation. <http://library.uta.edu/academic-plaza> The IDEAS Center offers free tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email IDEAS@uta.edu or call (817) 272-6593.

The English Writing Center (411LIBR): The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Our hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at <http://uta.mywconline.com>. Classroom Visits, workshops, and specialized services for graduate students are also available. Please see [www.uta.edu/owl](http://www.uta.edu/owl) for detailed information.