AEROPOLIS 2.0 ARCHITECTURAL OPTION STUDIO	SPRING 2021 ARCH 5501 SYLLABUS	INSTRUCTOR GALO CANIZARES galo.canizares@ttu.edu	TEXAS TECH COLLEGE OF ARCHITECTURE
CATALOG DESCRIPTION Topical studio that explores design, theoretical and/or technological issues that affect current architectural thought and practice.		TIME M/W/F 1:00 – 04:50pm	LOCATION TBA OFFICE HOURS BY APPT ONLY

If Texas Tech University campus operations are required to change because of health concerns related to the COVID-19 pandemic, it is possible that this course will move to a fully online delivery format. Should that be necessary, students will need to have access to a webcam and microphone for remote delivery of the class.

COURSE DESCRIPTION

Aeropolis - Territorial Fictions from the Troposphere

When Marx and Engels wrote, “all that is solid [eventually] melts into air,” in their Communist Manifesto, they were referring to the ephemerality of capitalist value and the disconnect between matter and ideology. But the phrase inadvertently also poses a curious design prompt. Taken literally, we can ask, if design is traditionally concerned with solid matter, what becomes of it when it eventually does melt into air? When everything becomes data, and the immaterial relationships between humans, machines, and bytes become our environmental, sovereign, or jurisdictional ubiquities?

Benjamin Bratton has recently taken up a position in which he reimagines the contemporary state of the world as one rapidly mutating into a single mega-structural infrastructure. Within this infrastructure, borders evaporate, everything is connected to everything, jurisdictions expand and contract, and digital pirates sail the seas of exabytes. Along a similar train of thought, Curtis Roth has envisioned a world in which our “selves” dematerialize and live life in a sea of screens and file extensions with our identities forever preserved as digital quanta. If we bring these two modes of thinking and operating together, what other kind of design prompts emerge?

For one, we can liken these de-materializations to maritime life. Within the open seas, a semi-solid surface plays host to individual habitable structures which operate both independently and as part of a larger network of sovereign and economic systems. Vessels belong to individuals, corporations, or states, and permanent

structures mine the subsurface for profit, yet all operate as closed environments in and of themselves, through various means of risk and market valuations (think: oil rigs). This is all facilitated through an international agreement of mutual freedom: international waters. The water itself is an infrastructural megastructure per-se, yet cannot be subdivided easily and thus warrants fluid jurisdictional strategies.

While the dematerialization of matter into data presents a habitation strategy for the virtual world, these international no-man's-lands show that we still have new frontiers to be encountered on our physical planet. Parallel to the ocean runs the troposphere, a layer of atmosphere which hosts (1) our most rapid means of transportation—airplane travel—and (2) a layer of radio frequencies spanning the globe. The lack of rigidity of this layer has slowed progress to territorialize it. Unlike the ocean, our means of inhabiting it depend largely on defying gravity and aerodynamics. It may seem obvious, but if we're looking for means of territorializing new frontiers, perhaps the air is the next logical step (on our way to space). Drones, balloons, and other means to counter gravity have recently questioned the political operation of airspace regulations. Airports themselves are international duty-free economic zones: transient states between states. As we lift ourselves off the ground, the question of how to territorialize the air above the earth becomes more pressing than ever.

This is the site for our design problem. The question of this studio is, how do we begin to inhabit the layer of air 10,000ft above our heads? What are the socio-political implications of such an endeavor? What new cultures emerge as a result? And what is the material character of these air environments? On the one hand, we will continue architecture's long battle against gravity by researching, assembling, and testing flying structures, and on the other, we will think critically about the possibility of an air culture: a totalized syncretic world operating above terra firma.

The studio sequence will be split along these two parallel thoughts. For the first third of the semester, we will analyze the history of both fictional and factual aerodynamic narratives, their attitudes and their material reality: the Wright Brothers' experiments, Zeppelin's semi-rigid airships, Alexander Graham Bell's kites, the Piccard family of aeronauts, Archigram's Instant City, Raimund Abraham's Air Ocean City, and the most recent attempts including the Solar Impulse Project, Tomas Saraceno's Aerocene Project, Hybrid Air Vehicles' Airlander 10, and Google's Project Loon. The second two-thirds of the semester will be spent designing speculative machines, scenarios, and narratives for new air cultures. Here, themes will include, the emergence of air jurisdictions, port-authorities, nomad societies, pirate economies, and resource networks.

The goal of the studio is to contextualize our contemporary moment within a history of territorialization. Bratton has suggested that the Westphalian model of dividing land through lines is not only inefficient in the digital age, but completely dysfunctional for a world run by satellites and radio waves. By piggy-backing off recent narratives of air-colonization (the longest solar-powered plane flight which took place this year, Saraceno's ongoing aerocene project), we can examine fluid ways of mitigating sovereign and cultural quandaries of our immaterial world to come.

LEARNING OBJECTIVES	COURSE STRUCTURE
In this course students are asked to address projects of increasing complexity, both in terms of research and in terms of material production. Students will learn to develop clear drawings, diagrams, and narratives as well as experimental representation techniques. Students are asked to think about and respond to the physical, social, and environmental context of air and develop sophisticated provocations. Representational skills and excellence in craft, but also a desire to push the limits said representation will be required. Upon completion of the studio, students should be	Studio meetings will generally be of two types: collective virtual pin-ups and smaller group discussions. Desk critiques may happen occasionally; when they do they will typically be at the end of a project. Students should be prepared to be in studio for the entirety of class time and must be ready to present at the beginning of class. Studios are based upon ongoing research. Successful completion of assignments and requirements are subject to the discoveries of previous work. All communication with the studio instructor should be carefully considered, as it will be critical to evolving directions and assignments.

able to:

- ➔ Define a research agenda.
- ➔ Describe the role of design research in architectural design.
- ➔ Augment current modes of working with new technologies.
- ➔ Identify visual cultures emerging from or alongside advanced technologies.
- ➔ Articulate an understanding of technologies as sociocultural mechanisms.

The studio will culminate in an exhibition of the speculative territory known as **Aeropolis**. Each group's project will be one episode within the larger narrative of this new territory.

NAAB CRITERIA MET

- ➔ A.1 Professional Communication Skills
- ➔ A.2 Design Thinking Skills
- ➔ A.4 Architectural Design Skills
- ➔ A.5 Ordering Systems
- ➔ A.6 Use of Precedents

Due to the breadth of information we will be covering, and the experimental nature of the studio, students will be working in pairs throughout the semester.

ASSIGNMENTS

- ➔ Project 1: Air Dossier
  - ◆ Research
  - ◆ Progress at each Class Meetings
  - ◆ Final Review
- ➔ Project 2: Aeropolis (Parts A and B)
  - ◆ Research
  - ◆ Progress at each Class Meetings
  - ◆ Mid-Review
  - ◆ Final Review

COURSE REQUIREMENTS

REQUIRED TEXTS

- ➔ Benjamin Bratton, *The Stack: on Software and Sovereignty* (Cambridge: MIT Press, 2015).
- ➔ Felicity Scott, *Architecture or Techno-Utopia* (Cambridge: MIT Press, 2007).
- ➔ Felicity Scott, *Living Archive 7: ANT FARM* (Barcelona: ACTAR, 2008).
- ➔ Felicity Scott, *Outlaw Territories: Environments of Insecurity/Architectures of Counterinsurgency* (New York: Zone Books, 2016).
- ➔ Sean Lally, *The Air From Other Planets*, (Lars Muller: Zurich, 2014).
- ➔ Yves Klein, *Air Architecture* (Germany: Hatje Cantz Verlag, 2004).
- ➔ Rem Koolhaas and Hans Ulrich Obrist, *Project Japan: Metabolism Talks...* (Koln: Taschen, 2011).

REQUIRED SOFTWARE

Students must have and maintain their own laptop computer for this class. A computer is required on the first day and must meet the minimum specifications outlined at http://arch.ttu.edu/wiki/Computer_Requirement. Students must have the latest versions of the following software installed on their computers:

- ➔ Adobe Creative Cloud or Creative Suite. Specifically, students must have access to Acrobat, Photoshop, Illustrator, and InDesign.
- ➔ Rhino3D (educational)
- ➔ Blender

Free and open-source alternatives to creative cloud can be found here:

- ➔ ~~Photoshop -~~ GIMP https://www.gimp.org/
- ➔ ~~Illustrator -~~ Inkscape https://inkscape.org/
- ➔ ~~InDesign -~~ Scribus https://www.scribus.net/

KEY PRECEDENTS

- ➔ Instant City, Archigram

ONLINE RESOURCES

➔ Walking City, Archigram ➔ No Stop City, Archizoom Associatti ➔ Supersurface: An Alternate Model for Life on Earth, Superstudio ➔ Air Ocean City, Raymund Abraham ➔ Drop City ➔ Dreamcloud, Ant Farm ➔ Inflatocookbook, Ant Farm ➔ Metabolist architecture movement (various projects) ➔ Loon Project, Google Inc. ➔ Breitling Orbiter, Breitling ➔ Solar Impulse Project, Solar Impulse ➔ Aerocene, Tomas Saraceno ➔ Cloud Cities, Tomas Saraceno ➔ Deep Sweep Probe, Julian Oliver ➔ Drone Orchestra, Liam Young	http://apexart.org/exhibitions/messer-reich.php Decolonized Skies Exhibition at Apex Art http://aerocene.com/ Ongoing project by Tomas Saraceno http://lawoftheair.com/ Blog on air habitation https://miro.com/ Collaborative workspace app

GRADING

Students will be evaluated on their daily studio progress and the resolution of their work presented at formal reviews. Students will additionally be evaluated on their attendance and active participation during in-class discussions and activities.
Projects will be evaluated based upon their formal, technical, conceptual, and professional merits on a 0-100 scale.

A - Superior/Excellent (90-100%) - Accurate and complete work that exceeds the level and requirements requested by the instructor. Consistently showing scholarly initiative, innovation, attempts, discrimination and discernment.
B - Above Average (80-89%) - Accurate and complete work meeting the requirements of the instructor, and exceeding the level requested in a few. Often showing scholarly initiative, innovation, attempts, discrimination and discernment.
C - Average (70-79%) - Accurate and complete work meeting the requirements of the instructor and requiring minimal corrections. Work is satisfactory, but needs improvement. Inconsistently showing scholarly initiative, innovation, attempts, discrimination and discernment.
D - Unsatisfactory (60-69%) - Work that is often inaccurate or incomplete, not meeting the minimum requirements of the instructor. Rarely showing scholarly initiative, innovation, attempts, discrimination and discernment.
F - Unacceptable (0-59%) - work that is unacceptable therefore, not defined.

All work must be completed on time to receive full credit. Late or incomplete work will result in a reduced grade.

Please refer to the Attendance Policy below for further clarification regarding attendance.

Participation in lectures and events outside class are required as specified by your instructor.

Semester grade distribution:
PROJECT 1 - 30%
PROJECT 2.A - 30%
PROJECT 2.B - 30%
PARTICIPATION - 10%

SCHEDULE

WEEK	M	W	F
1 ➔ Project 1		01/20/2021	01/22/2021 ➔ Project 1 Assigned
2 ➔ Project 1	01/25/2021 ➔ Blender Tutorial 1	01/27/2021 ➔ Blender Tutorial 2	01/29/2021 ➔ Pin-up
3 ➔ Project 1	02/01/2021	02/03/2021 **NO CLASS**	02/05/2021 ➔ Pin-up
4 ➔ Project 1	02/08/2021	02/10/2021	02/12/2021 ➔ **Project 1 Review**
5 ➔ Project 2, Part A	02/15/2021 ➔ Project 2, Part A Assigned	02/17/2021	02/19/2021 ➔ Pin-up
6 ➔ Project 2, Part A	02/22/2021	02/24/2021	02/26/2021 **NO CLASS**
7 ➔ Project 2, Part A	03/01/2021	03/03/2021	03/05/2021 ➔ Pin-up
8 ➔ Project 2, Part A	03/08/2021	03/10/2021	03/12/2021 ➔ **Project 2, Part B Review (Midterm)**
9 ➔ Project 2, Part B	03/15/2021 ➔ Project 2, Part B Assigned	03/17/2021	03/19/2021 **NO CLASS**
10 ➔ Project 2, Part B	03/22/2021	03/24/2021	03/26/2021 ➔ Pin-up
11 ➔ Project 2, Part B	03/29/2021	03/31/2021	04/02/2021 ➔ Pin-up
12 ➔ Project 2, Part B	04/05/2021 **NO CLASS**	04/07/2021	04/09/2021 ➔ Pin-up
13 ➔ Project 2, Part B	04/12/2021	04/14/2021	04/16/2021 ➔ Pin-up
14	04/19/2021	04/21/2021	04/23/2021

➔ Project 2, Part B			➔ Pin-up
15 ➔ Project 2, Part B	04/26/2021	04/28/2021	04/30/2021 ➔ Pin-up
FINAL REVIEW			**05/04/2021**

UNIVERSITY REQUIRED STATEMENTS

ADA STATEMENT:
Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.

ACADEMIC INTEGRITY STATEMENT:
Academic integrity is taking responsibility for one's own class and/or course work, being individually accountable, and demonstrating intellectual honesty and ethical behavior. Academic integrity is a personal

choice to abide by the standards of intellectual honesty and responsibility. Because education is a shared effort to achieve learning through the exchange of ideas, students, faculty, and staff have the collective responsibility to build mutual trust and respect. Ethical behavior and independent thought are essential for the highest level of academic achievement, which then must be measured. Academic achievement includes scholarship, teaching, and learning, all of which are shared endeavors. Grades are a device used to quantify the successful accumulation of knowledge through learning. Adhering to the standards of academic integrity ensures grades are earned honestly. Academic integrity is the foundation upon which students, faculty, and staff build their educational and professional careers. [Texas Tech University ("University") Quality Enhancement Plan, Academic Integrity Task Force, 2010]

RELIGIOUS HOLY DAY STATEMENT:
"Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20. A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. A student who is excused under section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

DISCRIMINATION, HARASSMENT, AND SEXUAL VIOLENCE STATEMENT:
Texas Tech University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from gender and/or sex discrimination of any kind. Sexual assault, discrimination, harassment, and other Title IX violations are not tolerated by the University. Report any incidents to the Office for Student Rights & Resolution, (806)-742-SAFE (7233) or file a report online at titleix.ttu.edu/students. Faculty and staff members at TTU are committed to connecting you to resources on campus. Some of these available resources are: TTU Student Counseling Center, 806-742-3674, https://www.depts.ttu.edu/scc/(Provides confidential support on campus.) TTU 24-hour Crisis Helpline, 806-742-5555, (Assists students who are experiencing a mental health or interpersonal violence crisis. If you call the helpline, you will speak with a mental health counselor.) Voice of Hope Lubbock Rape Crisis Center, 806-763-7273, voiceofhopelubbock.org (24-hour hotline that provides support for survivors of sexual violence.) The Risk, Intervention, Safety and Education (RISE) Office, 806-742-2110, https://www.depts.ttu.edu/rise/ (Provides a range of resources and support options focused on prevention education and student wellness.) Texas Tech Police Department, 806-742-3931,http://www.depts.ttu.edu/ttpd/ (To report criminal activity that occurs on or near Texas Tech campus.)

CIVILITY IN THE CLASSROOM STATEMENT:
Texas Tech University is a community of faculty, students, and staff that enjoys an expectation of cooperation, professionalism, and civility during the conduct of all forms of university business, including the conduct of student–student and student–faculty interactions in and out of the classroom. Further, the classroom is a setting in which an exchange of ideas and creative thinking should be encouraged and where intellectual growth and development are fostered. Students who disrupt this classroom mission by rude, sarcastic, threatening, abusive or obscene language and/or behavior will be subject to appropriate sanctions according to university policy. Likewise, faculty members are expected to maintain the highest standards of professionalism in all interactions with all constituents of the university (www.depts.ttu.edu/ethics/matadorchallenge/ethicalprinciples.php).

LGBTQIA SUPPORT STATEMENT*:
I identify as an ally to the lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA) community, and I am available to listen and support you in an affirming manner. I can assist in connecting you with resources on campus to address problems you may face pertaining to sexual orientation and/or gender identity that could interfere with your success at Texas Tech. Please note that additional resources are available through the Office of LGBTQIA within the Center for Campus Life, Student Union Building Room 201, www.lgbtqia.ttu.edu, 806.742.5433."

*If you prefer to list campus resources rather than a statement about ally status, you might include the

following among other campus resources you wish to share:

Office of LGBTQIA, Student Union Building Room 201, www.lgbtqia.ttu.edu, 806.742.5433
Within the Center for Campus Life, the Office serves the Texas Tech community through facilitation and leadership of programming and advocacy efforts. This work is aimed at strengthening the lesbian, gay, bisexual, transgender, queer, intersex, and asexual (LGBTQIA) community and sustaining an inclusive campus that welcomes people of all sexual orientations, gender identities, and gender expressions.

COVID-19 INFORMATION

Face coverings are required
Texas Tech University requires that students wear face coverings while in classes, while otherwise in campus buildings, and when social distancing cannot be maintained outdoors on campus.

Signage
Be attentive to signage posted at external and some classroom doorways that indicates entry and exit ways, gathering and queuing spaces, and availability of masks and hand sanitizer.

Seating assignments
The purpose of assigned seating is to assist in contact tracing, if necessary, and to augment social distancing. Students are expected to sit at a minimum of six feet apart. A required seating chart will be created once everyone is positioned with appropriate social distancing. There will also be an orderly procedure, designed to ensure social distancing, for exiting the classroom.

Potential for Course Modality Change
If Texas Tech University campus operations are required to change because of health concerns related to the COVID-19 pandemic, it is possible that this course will move to a fully online delivery format. Should that be necessary, students will likely need a webcam and microphone and will be advised of additional technical and/or equipment requirements, including remote proctoring software.

Illness-Based Absence Policy
If at any time during this semester you feel ill, in the interest of your own health and safety as well as the health and safety of your instructors and classmates, you are encouraged not to attend face-to-face class meetings or events. Please review the steps outlined below that you should follow to ensure your absence for illness will be excused. These steps also apply to not participating in synchronous online class meetings if you feel too ill to do so and missing specified assignment due dates in asynchronous online classes because of illness.

1. If you are ill and think the symptoms might be COVID-19-related:
a) Call Student Health Services at 806.743.2848 or your health care provider.
b) Self-report as soon as possible using the ttucovid19.ttu.edu management system. This website has specific directions about how to upload documentation from a medical provider and what will happen if your illness renders you unable to participate in classes for more than one week.
c) If your illness is determined to be COVID-19-related, remaining documentation and communication will be handled through the Office of the Dean of Students, including notification to your instructors.
d) If your illness is determined not to be COVID-19-related, please follow steps 2.a-d below.

2. If you are ill and can attribute your symptoms to something other than COVID-19:
a) If your illness renders you unable to attend face-to-face classes, participate in synchronous online classes, or miss specified assignment due dates in asynchronous online classes, you are encouraged to visit with either Student Health Services at 806.743.2848 or your health care provider. Note that Student Health Services and your own and other health care providers may arrange virtual visits.
b) During the health provider visit, request a “return to school” note;
c) E-mail the instructor a picture of that note;
d) Return to class by the next class period after the date indicated on your note.

Following the steps outlined above helps to keep your instructors informed about your absences and ensures your absence or missing an assignment due date because of illness will be marked excused. You will still be responsible to complete within a week of returning to class any assignments, quizzes, or exams you miss because of illness.