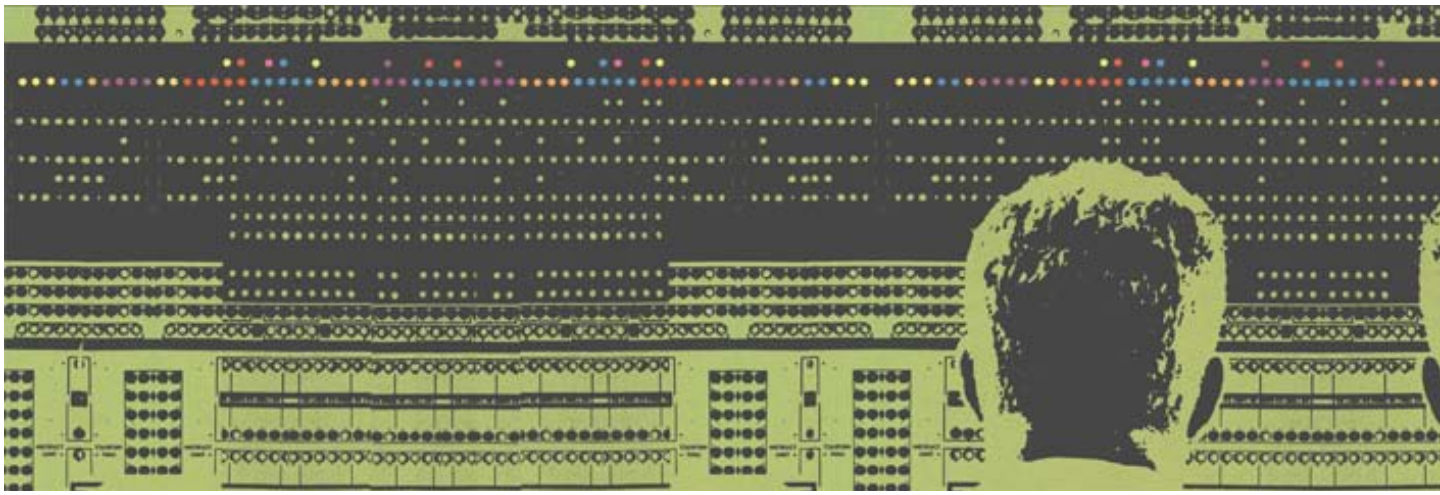

ARC 619: Architecture and the Information Environment
Fall 2011

Credit Hours: 3 Credits
Class Hours: Thursday, 10:00 am – 12:40 pm
Class Location: Hayes Annex B 01
Instructor: Omar Khan (omarkhan@buffalo.edu)
Office Hours: Thursday, 1pm-3pm, Hayes 302A
Web Address: http://cast.ap.buffalo.edu/courses/f11/arc619/

Eligibility: The seminar is a required course for students enrolled in the Situated Technologies Research Group. It is open to other graduate students space permitting.

Prerequisites: This is a reading seminar that requires students to complete weekly readings (up to 50 pages) and engage in class discussions. Students should have taken one or more humanities reading and writing courses. You will be expected to critically evaluate what you read and communicate the author's and your own position through written assignments.

Course Description:
This seminar is the first in a two-semester sequence that introduces relevant theoretical and historical models for research in the design of Situated Technologies. It introduces students to the significant ideas that define the information environment and how they concern architecture and urbanism. Taking a broad interdisciplinary approach the course draws texts from science, engineering, information theory, aesthetics, philosophy, sociology, media, art, architecture and urbanism. It includes primary texts as well as their interpretations, providing a critical examination of the ideas and their influence on technology and society.

The information environment refers to the ideas and artifacts produced by information and computing technologies (ICT) and their influence on social and cultural production. This critical reading seminar, roughly organized in historical progression, will explore a series of themes that intersect ICT development, architecture and urbanism. We will study some of the important concepts that have influenced the technological imagination and how they continue to frame the debate on technological progress. We will also explore what it means to *situate* technologies and how the architectural imagination can provide us with the resources to question technological determinism.

The following themes will form the schedule of the seminar:
The Case of Technology
The Case of Media
The Information Machines and the Dilemma of Communication
Cybernetics and the Problems of Control
Systems Thinking and the Primacy of Relations
Interactivity and Human/Computer Mutualism
Situations, Situatedness and the Significance of Actions
Topological Space
Emergence and the Evolution of Form
Networks and Interconnectivity
Crowds, Crowdsourcing and the Power of the Multitude
Pervasive Computing

Course Objectives and Learning Outcomes:

- The seminar will familiarize students with the significant personalities, concepts and issues pertaining to the development of the information environment and how it intersects with architecture and urbanism.
- Students will engage in directed readings of primary texts and learn to critically examine and understand their content.
- Students will learn to construct theoretical positions and argue them through credible referencing of other's work.
- Students will learn to edit their own work for conceptual clarity and proper referencing.

Requirements and Evaluations:

Class participation: 20%

- Students should have read all the required texts and prepared **3 questions** on the readings.
- Students should actively participate in the class discussions.
- Students are expected to come to all classes and have a credible (sickness or family emergency) excuse if they can't attend. This excuse should be shared with the instructor prior to the class.

Paper 1: 25%

- You will write a 1500 word paper for Week 6 (Oct 5) based on topics provided or of your own choosing using the texts that you have read in the previous weeks.
- You will revise your paper based upon the comments provided by the instructor and upload it to the website.

Paper 2: 25%

- You will write a 1500 word paper for Week 12 (Nov 16) based on topics provided or of your own choosing using the texts that you have read in the previous weeks.
- You will revise your paper based upon the comments provided by the instructor and upload it to the website.

Paper 3: 30%

- You will write a 2500 word final paper due based on topics provided or of your own choosing using the texts that you had read the previous weeks.

Schedule: The schedule is subject to change

W1	1-Sep		**Introduction**
W2	8-Sep		**The Case of Technology**
		REQ	Martin Heidegger, "The Question Concerning Technology", *The Question Concerning Technology and other Essays*, Pantheon, 1972.

			Siegfried Giedion, "Springs of Mechanization", *Mechanization Takes Command: a contribution to anonymous history*, Oxford University Press, 1948.
		rec	Reyner Banham, "Stocktaking- Tradition and Technology", *Architectural Review*, February 1960.
W3	15-Sep		**The Case of Media**
		REQ	Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction", 1935.
			Marshall McLuhan, "The Medium is the Message", *Understanding Media*, 1964.
		rec	Lucy R. Lippard and John Chandler, "The Dematerialization of Art," *Art International*, 12:2, February 1968.
W4	22-Sep		**The Information Machines and the Dilemma of Communication**
		REQ	Warren Weaver, "The Mathematics of Communication", *Scientific American,* 1949.
			Alan Turing, "Computing, Machinery and Intelligence", *Mind : A Quarterly review of Psychology and Philiosophy,* 59(239), October 1950.
			Charles and Ray Eames, *A Communication Primer,* (Film) 1953.
		rec	John McHale, "Information, Technology and Communication", *The Changing Information Environment*, Westview Press, 1976.
			Jagjit Singh, "Analogue Machines" and "Digital Machines", *Great Ideas in Information Theory, Language and Cybernetics,* Dover Publications, 1966.
W5	29-Sep		**Cybernetics and the Problems of Control**
		REQ	Norbert Weiner, "Cybernetics in History", *The Human Use of Human Beings: Cybernetics and Society*, 1954.
			Gordon Pask, "The Architectural Relevance of Cybernetics", *Architectural Design*, September 1969.
			Stafford Beer, "The Disregarded Tools of Moderns Man", "A Liberty Machine In Prototype", The Free man in a Cybernetic World", in *Designing Freedom*, Massey Lectures, 1973.
		rec	Bernard Scott, "2ndOrderCybernetics: an historical introduction", *Kybernetes*, Vol. 33 No. 9/10, 2004.
			Stanley Matthews, "The Fun Place as Virtual Architecture, Cedric Price and the Practices of Indeterminacy", *JAE,* v.59, Issue 3, Feb 2006.
W6	6-Oct		**Systems Thinking and Primacy of Relations**
Paper 1 Due		REQ	W. Ross Ashby, "Principles of the Self Organizing System", in von Foerster, Heinz, ed., *Principles of Self-Organization*, Pergamon Press, 1962.
			Jack Burnham, "Systems Esthetics", *Artforum,* September 1968.
		rec	Jascia Reichardt, *Cybernetic Serendipity*, Exhibition Catalogue, 1968.
			Luke Skrebowski, "All Systems Go: Recovering Hans Haacke's System Art", *Grey Room* v. 30, Winter 2008
W7	13-Oct		**Interactivity and Human/Computer Mutualism**

		REQ	J.C.R. Licklider, "Man-Computer Symbiosis", *IRE Transaction on Human Factors in Electronics*, HFE-1:4-11, March 1960.
			Myron Krueger, "Responsive Environments", *AFIPS 46 National Computer Conference Proceedings*, AFIPS Press, 1977.
			Dubberly, Pangaro and Haque, "What is Interaction? Are there diferent types?" *Interactions*, v.XVI.1, 2009.
		rec	Nicholas Negroponte, "Architecture Machine", *Architectural Design*, September 1969.
			Dourish, Paul. *Where The Action Is: The Foundations of Embodied Interaction*, MIT Press, 2001.
W8	20-Oct		**Situations, Situatedness and Significance of Actions**
		REQ	Guy Debord, et. al."Preliminary Problems in Constructing a Situation", *Internationale Situationniste*, v.1, 1958.
			Lucy Suchman, "Preface" and Situated Actions", *Plans and Situated Actions: The Problem of Human-Machine Communication*, Cambridge, 1987.
			Malcolm McCullough, "Embedded Gear" and "Situated Types", *Digital Ground: Architecture, Pervasive Computing and the Environmental Knowing,* MIT Press, 2005.
		rec	Bernard Tschumi, "Disjunctions", *Architecture and Disjunction*, MIT Press, 1996.
W9	27-Oct		**Topological Space**
		REQ	Deleuze, Gilles. "Topology: 'Thinking Otherwise,' Foldings or the Inside of Thought (Subjectification)", *Foucault*, University of Minnesota Press, 1988.
			Sanford Kwinter, "Landscapes of Change: Boccioni's Stati d'animo as a General Theory of Models", *Assemblage*, v.19, MIT Press, 1992
			Stan Allen, "From Object to Field", *Architectural Design: After Geometry*, Academy Group, 1997.
		rec	Greg Lynn, "Body Matters", *Journal of Philosophy and Visual Arts*, 1993.
			D'Arcy Wentworth Thompson, *On Growth and Form*, Cambridge, 1917
W10	3-Nov		**Emergence and the Evolution of Form**
		REQ	Michael Weinstock, "The Forms of Information, Energy and Ecology", *The Architecture of Emergence: the eveolution of Form in nature and Civilization*, John Wiley & Sons, 2010.
			Manual deLanda, "NonOrganic Life", in *Zone6: Incorporations* by Jonathan Crary and Sanford Kwinter, Zone Books, 1992.
		rec	John Holland, "Maps, Game Theory and Computer based Modeling", *Emegence: From Chaos to Order*, Perseus Books, 1998.
W11	10-Nov		**Networks and Interconnectivity**
		REQ	Mark Wigley, "Network Fever", *Grey Room*, No. 4, Summer 2001.
			Kazys Varnelis, "The Rise of the Network Culture", *Networked Publics*, MIT press, 2008.

		rec	Stephen Graham and Simon Marvin, "Prologue" and "Introduction", *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, Routledge, 2001. Alexander Galloway and Eugene Thacker, "Protocols, Control and Networks", *Grey Room*, No. 17, Fall 2004.
W12	17-Nov		**Crowds, Crowdsourcing and the Power of the Multitude**
Paper 2 Due		REQ	Paulo Virno, *A Grammar of the Multitude*, Semiotext(e), 2004. Howard Rheingold, "Smart Mobs: the Power of the Mobile Many", *Smart Mobs: the Next Social Revolution*, Basic Books, 2002.
		rec	J.S. McClelland, "The Sanity of Crowds and the Madness of Power: Elias Canetti's Crowd and Power (1960)", *The Crowd and the Mob*, London, 1989.
W13	24-Nov		**Pervasive Computing**
		REQ	Mark Weiser, "The Computer for the 21st Century", *Scientific American*, September 1991. Anthony Dunne, "Hertzian Space", *Hertzian Tales: Electronic Products, Aesthetic Experience and Critical Design*, RCA Computer Related Design Research, May 1999. William Mitchell, "Recombinant Architecture", *City of Bits*, MIT Press, 1995.
		rec	Adam Greenfield, *The Dawning Age of Ubiquitous Computing*, New Riders Publishing, 2006.
W14	1-Dec		**The Challenge for Design when the Consumer becomes Producer**
		REQ	Umberto Eco, *The Open Work*, trans. Anna Cancogni, Harvard University Press, 1989. Niel Gershenfield, *Fab: The coming revolution on your desktop- From Personal computing to Personal Fabrication*, Basic Books 2005. Bruce Sterling, *Shaping Things*, MIT Press, 2005.
W15	8-Dec		**Conclusions- Final Paper Discussions**
Final Paper: due date to be determined			

Work Expectations:
Most of your time in the seminar will be spent on the weekly readings. This will range, depending on your abilities, up to 6 hours per week. **Many of the readings are difficult and you may not be able to complete them but you should put in the required time.**

Available Support:
My office hours are Mondays 10-1pm. I you are having difficulty with the readings drop by and see me so that we can go through them together. It is incumbent on you to stay on top of the readings and I will provide you with the necessary support as needed.

Specific Needs:
Students with specific needs that require attention should inform the instructor at the beginning of the semester. If you have a disability (physical, learning, or psychological) which may make it difficult for you to carry out the course work as outlined, and/or requires accommodations such as recruiting note takers, readers, or extended

time on exams and assignments, please contact the Office of Disability Services, 25 Capen Hall, 645-2608. The office will provide you with information and review appropriate arrangements for reasonable accommodations.

Course Policies:
Include safety procedures and laboratory or studio rules. Clearly state policies regarding class attendance; due dates; missing homework, tests or exams; make-ups; extra credit; requesting extensions; reporting illnesses; cheating and plagiarism. Include a description of students' responsibilities in the learning process and the professor's and graduate student instructors' responsibilities. You might also list acceptable and unacceptable classroom behavior.

Academic Integrity:
Academic integrity is a fundamental university value. Through the honest completion of academic work, students sustain the integrity of the university while facilitating the university's imperative for the transmission of knowledge and culture based upon the generation of new and innovative ideas.
When an instance of suspected or alleged academic dishonesty by a student arises, it shall be resolved according to the following procedures. These procedures assume that many questions of academic dishonesty will be resolved through consultation between the student and the instructor (a process known as consultative resolution, as explained below).

Examples of Academic Dishonesty
Academic dishonesty includes, but is not limited to, the following:

- *Previously submitted work*. Submitting academically required material that has been previously submitted—in whole or in substantial part—in another course, without prior and expressed consent of the instructor.
- *Plagiarism*. Copying or receiving material from any source and submitting that material as one's own, without acknowledging and citing the particular debts to the source (quotations, paraphrases, basic ideas), or in any other manner representing the work of another as one's own.
- *Cheating*. Soliciting and/or receiving information from, or providing information to, another student or any other unauthorized source (including electronic sources such as cellular phones and PDAs), with the intent to deceive while completing an examination or individual assignment.
- *Falsification of academic materials*. Fabricating laboratory materials, notes, reports, or any forms of computer data; forging an instructor's name or initials; resubmitting an examination or assignment for reevaluation which has been altered without the instructor's authorization; or submitting a report, paper, materials, computer data, or examination (or any considerable part thereof) prepared by any person other than the student responsible for the assignment.
- *Misrepresentation of documents*. Forgery, alteration, or misuse of any University or Official document, record, or instrument of identification.
- *Confidential academic materials*. Procurement, distribution or acceptance of examinations or laboratory results without prior and expressed consent of the instructor.
- *Selling academic assignments*. No person shall sell or offer for sale to any person enrolled at the University at Buffalo any academic assignment, or any inappropriate assistance in the preparation, research, or writing of any assignment, which the seller knows, or has reason to believe, is intended for submission in fulfillment of any course or academic program requirement.
- *Purchasing academic assignments*. No person shall purchase an academic assignment intended for submission in fulfillment of any course or academic program requirement.

Behavioral Expectations in the Classroom:

- To prevent and respond to distracting behavior, faculty should clarify standards for the conduct of class, either in the syllabus, or by referencing the expectations cited in the Student Conduct Regulations. Classroom "etiquette" expectations should include:

- Attending classes and paying attention. Students should not ask an instructor in class to go over material they missed by skipping a class or not concentrating.
- Not coming to class late or leaving early. If a student has to enter a class late, he or she should do so quietly and should not disrupt the class by walking between the class and the instructor. Students should not leave class unless it is an absolute necessity.
- Not talking with other classmates while the instructor or another student is speaking. If a student has a question or comment, he or she should raise a hand, rather than starting a conversation about it with a neighbor.
- Showing respect and concern for others by not monopolizing class discussion. Students must allow others time to give their input and ask questions. Students should not stray from the topic of class discussion.
- Not eating and drinking during class time.
- Turning off electronic devices including cell phones, pagers, and beeper watches.
- Avoiding audible and visible signs of restlessness. These are both rude and disruptive to the rest of the class.
- Focusing on class material during class time. Sleeping, talking to others, doing work for another class, reading the newspaper, checking e-mail, and exploring the Internet are unacceptable and can be disruptive.
- Not packing bookbags or backpacks to leave until the instructor has dismissed class.

Student Responsibility Statement:

- The university is committed to the ideal of flexibility and diversity in the educational experience. Certain regulatory procedures are necessary, however, to ensure that the complex needs of a large student body in search of diverse educational goals are met efficiently and smoothly. Students are advised to familiarize themselves with the following details in order to avoid any difficulties along their chosen path to the baccalaureate degree.
- By accepting responsibility for their education, students enhance the development of their academic, social, and career goals. As a condition of enrollment, students are responsible for reviewing, understanding, and abiding by the university's regulations, procedures, requirements, and deadlines as described in official publications, including the university's undergraduate catalog, UB Web sites, and official university e-mail communications. In addition, all students are required to positively affirm their knowledge of, and adherence to, UB's Student Conduct Rules, University Standards and Administrative Regulations prior to their inaugural semester at UB. Asserting a lack of knowledge of university regulations will not be accepted as a basis for an exception to these regulations.

Class Attendance:

Students may be justifiably absent from classes due to religious observances, illness documented by a physician or other appropriate health care professional, conflicts with university-sanctioned activities documented by an appropriate university administrator, public emergencies, and documented personal or family emergencies. The student is responsible for notifying the instructor in writing with as much advance notice as possible. Instructors may determine a reasonable amount of coursework that should be completed in order to makeup the student's absence. Students are responsible for the prompt completion of any alternative assignments.

NAAB Criteria:

The course addresses the following criteria:

A. 9. Historical Traditions and Global Culture: *Understanding* of parallel and divergent canons and traditions of architecture, landscape and urban design including examples of indigenous, vernacular, local, regional, national settings from the Eastern, Western, Northern, and Southern hemispheres in terms of their climatic, ecological, technological, socioeconomic, public health, and cultural factors.

A.11. Applied Research: *Understanding* the role of applied research in determining function, form, and systems and their impact on human conditions and behavior.