General Education Course Information Sheet

Please submit this sheet for each proposed course

Department & Course Number	Architecture and Urban Design 98T
Course Title	Software Cultures and Augmented Design: Architecture, Media and the Computer

1 Check the recommended GE foundation area(s) and subgroups(s) for this course

Foundations of the Arts and Humanities	
• Literary and Cultural Analysis	
• Philosophic and Linguistic Analysis	
• Visual and Performance Arts Analysis and Practice	X
Foundations of Society and Culture	
• Historical Analysis	
• Social Analysis	
Foundations of Scientific Inquiry	
• Physical Science	
With Laboratory or Demonstration Component must be 5 units (or more)	
• Life Science	
With Laboratory or Demonstration Component must be 5 units (or more)	

2. Briefly describe the rationale for assignment to foundation area(s) and subgroup(s) chosen.

This class will examine the histories of architecture and computation with an emphasis on the technology as a visual medium. Foundationally this class will look at the effects of the computer on contemporary architecture through the theories, visual culture and practices of the discipline. Architecture will be considered as both a discipline centered around the design and construction of buildings and a discipline in an "expanded field" with many points of contact with art and the counterculture originating in the 60s and 70s.

3. List faculty member(s) who will serve as instructor (give academic rank):
Randolph K. Nakamura/Professor Sylvia Lavin

4. Indicate when do you anticipate teaching this course:

	2014-2015	Winter Enrollment	X	Spring Enrollment	

GE Course Units **5**

5. Please present concise arguments for the GE principles applicable to this course.

❑ General Knowledge	The seminar will address the histories of architecture and computing in the postwar era via an interrogation of the period's practices, writings and methods. Emphasis will be on historiography, and how history is constructed and disseminated.
❑ Integrative Learning	Crucial to the period under study in the course is a transdisciplinary confluence of architecture, computation, media theory and art. All four disciplines will be engaged in the readings for the course.
❑ Ethical Implications	An understanding of the institutional and govermental roots of the architectural practices covered in the course will be key. Students will have to assess the effects of the Cold War on the development of the computer in architecture.
❑ Cultural Diversity	Emphasis will be put on the historical and social construction of architecture and technology. Readings will reinforce how the computer was used in different cultural contexts.
❑ Critical Thinking	In-class discussions and readings responses will emphasize critical thinking and an interrogation of assumptions and ideas manifest in the material covered.
❑ Rhetorical Effectiveness	Students will be assesed on their ability to deliver a persuasive argument during discussions and for all written assignments.
❑ Problem-solving	Group presentations and the final paper will require substantial problem-solving and research. Students will be required to assess and analyze new material.
❑ Library & Information Literacy	Students will be required to write final paper which must include scholarly sources in both digital and traditional formats.

(A) STUDENT CONTACT PER WEEK (if not applicable write N/A)

1.	Lecture:	**n/a**	(hours)
2.	Discussion Section:	**3**	(hours)
3.	labs	**n/a**	(hours)
4.	Experiential (service learning, internships, other):	**n/a**	(hours)
5.	Field Trips:	**n/a**	(hours)
	(A) TOTAL Student Contact Per Week	**3**	**(HOURS)**

(B) OUT-OF-CLASS HOURS PER WEEK (if not applicable write N/A)

1.	General Review & Preparation:	**1**	(hours)
2.	Reading	**5.5**	(hours)
3.	Group Projects:	**1**	(hours)
4.	Preparation for Quizzes & Exams:	**0**	(hours)
5.	Information Literacy Exercises:	**0.5**	(hours)
6.	Written Assignments:	**2**	(hours)
7.	Research Activity:	**2**	(hours)
	(B) TOTAL Out-of-class time per week	**12**	**(HOURS)**
	GRAND TOTAL (A) + (B) must equal at least 15 hours/week	15	**(HOURS)**

2014-15 Collegium of University Teaching Fellows

AUD 98T, Winter 2015
Randolph Kinsuke Nakamura (UID: 904046132)

Title:
Software Cultures and Augmented Design: Architecture, Media, and the Computer

Description:
This seminar will examine the intertwined histories of the computer and architecture dating from the early 1960s, where architecture, computation, media, and art intermingle to produce unique buildings, proposals, and technologies.

Introduction
Within the discipline of architecture the computer has commonly been seen as a device adopted for its functional abilities in machine logic and calculation; an instrument for design and efficient production. Yet the intertwined histories of the computer and architecture dating from the early 1960s shows a more complicated narrative where architecture, computation, media, and art intermingle to produce unique buildings, proposals, and technologies. The trajectory of this seminar will track the formation of the computer within architecture from a device to deal with the "big" data generated by the practices of large corporate architectural firms, to the creation of interface driven media rooms, and ending with an examination of software as a kind of semi-autonomous form generating machine.

We will interrogate the computer as a kind of "mediating machine" for architecture, a means for architecture to interface with a vast complex of practices, institutions, and forms of cultural production in the postwar period. As much as the computer was a product of cybernetics, operations research and Cold War ideologies, its formation in architecture will be seen not as merely instrumental, but as a means of producing new possibilities for architecture.

This class will be based on a series of readings and projects (buildings, technologies, videos etc.) that demonstrate the range of practices engendered by the computer as tool, "intelligence," and media machine. Students will be expected to do all assigned readings, participate actively in class discussions and exercises, do group presentations of projects, and write a 3000-3500 word long final research paper.

Requirements

1. Group presentation of projects/buildings/technologies for weeks 5-9
2. Lead the discussion for at least 2 of the assigned readings
3. 3000-3500 word research paper on a selected topic.
    a. Abstract due by week 5
    b. Schedule individual meetings for week 6 and 7 outside of class.
    c. Brief (10 minute) presentation of paper week 10.
4. Participation in class discussions is mandatory. There will also be in-class group exercises that will examine buildings, images, and interfaces from readings and projects in the syllabus. These exercises will be used as jumping off points for discussion.
5. Reading responses: On-line discussion forum posting of questions based on at least 5 different readings. Students must also respond to at least 3 questions from other students.
6. Students must do all assigned readings.

GRADING

Participation	20%
Group Presentations	15%
Reading Responses	15%
Paper	50%

Schedule

Week 1 - Introduction

Introduction to seminar, class requirements.

Week 2 - Pre-histories

Projects:
Endless House, Frederick Kiesler, 1949
SAGE, USAF, 1958
Sketchpad, Ivan Sutherland, 1963

An examination of some of the historical progenitors in architecture and computation to the development of the computer in architecture in the 1960s and 1970s. In particular the work of architectural historian Reyner Banham, media theorist Marshall McLuhan and the

Cold War development of the computer will be emphasized.

Readings:

Banham, Reyner. “1960: Stocktaking.” *Architectural Review* 127, no. 756 (1960): 93-100.

Edwards, Paul N. “SAGE.” in *The Closed World : Computers and the Politics of Discourse in Cold War America.* Inside technology. Cambridge, Mass.: MIT Press, 1996, 75-111.

Kiesler, Frederick J. “The Broadcasted Decoration [1929].” *Frederick J. Kiesler : selected writings* (1996): 19.

McLuhan, Marshall. “Housing: New Look and Outlook.” *Understanding media : the extensions of man* (1997): 123-130.

Suggested Reading:

Ceruzzi, Paul E. “The Early History of Software, 1952-1968.” *A History of Modern Computing* (1998): 79-108.

Sutherland, Ivan Edward. “Sketchpad, a Man-machine Graphical Communication System.” dissertation, Massachusetts Institute of Technology, 1985.

Week 3 - Electronic multimedia architecture

Projects:

Philips Pavilion, Brussels World’s Fair, Le Corbusier/Edgard Varese, 1958
IBM Pavilion, New York World’s Fair, Charles and Ray Eames/Eero Saarinen, 1964

This week we will look at world expo pavilions that begin to incorporate immersive electronic and media elements in efforts to “naturalize” the computer as an architectural environment.

Readings:

Colomina, Beatriz. “Enclosed by Images: The Eameses’ Multimedia Architecture.” *Grey Room* , no. 2 (2001): 7-29.

Harwood, John. “Naturalizing the Computer : IBM Spectacles.” In *The Interface : IBM and the*

Transformation of Corporate Design, 1945-1976. Minneapolis: University of Minnesota Press, 2011.

Johansen, John M. "An Architecture for the Electronic Age." *The American Scholar* 35, no. 3 (1966): 461-471.

(excerpt) Treib, Marc. *Space Calculated in Seconds : The Philips Pavilion, Le Corbusier, Edgard Varese.* Princeton, N.J.: Princeton University Press, 1996.

Week 4 - Software, Interfaces and Screens

Projects:
Urban 5, Nicholas Negroponte, 1967
Building Optimization Program, Skidmore, Owens, and Merrill, 1967

Early computer interfaces in architecture are the focus of this week. These interfaces will be seen as producing a kind of artificial intelligence as well as a new framework for architectural design and production.

Readings:

Adams, Nicholas. "Creating the Future (1964-1986): How a Passionate Group of SOM Architects and Engineers Came Together to Envision Their Profession Through the Lens of Technology." *SOM Journal* 8 (2013): 120-136.

(excerpt) Galloway, Alexander R. *The Interface Effect.* Cambridge, UK; Malden, MA: Polity, 2012.

Negroponte, Nicholas. "URBAN5: An Experimental Urban Design Partner." *Computer graphics in architecture and design : proceedings of the Yale Conference on Computer Graphics in Architecture, held in New Haven, Connecticut, April 1968* (1969): 77-88.

Suggested Reading:

Negroponte, Nicholas. *The Architecture Machine.* Cambridge, Mass.: M.I.T. Press, 1970.

Computer Graphics in Architecture and Design : Proceedings of the Yale Conference on Computer Graphics in Architecture, Held in New Haven, Connecticut, April 1968. Edited by

Milne Murray. New Haven, Conn.: Yale School of Art and Architecture, 1969.

Chun, Wendy Hui Kyong. "On Software, or the Persistence of Visual Knowledge." *Grey Room* , no. 18 (2004): 26-51.

Montfort, Nick , Bogost, Ian. *Racing the Beam the Atari Video Computer System.* Cambridge, Mass.: MIT Press, 2009.

Week 5 - Corporations and Institutions: *MIT, IBM, DARPA*

The influence of the complex of academic, corporate and military institutions will be assesed in this week. Almost all experimentation with the computer in architecture in the 60s and 70s came out of academic research groups and/or DARPA funded research. The effects of these institutions (politics of accepting military funding, questions of what constitutes research) on the formation of the computer in architecture will be interrogated and assessed.

Readings:

Harwood, John. "IBM Architecture: The Multinational Counterenvironment." *The interface : IBM and the transformation of corporate design, 1945-1976* (2011): 100-159.

Wisnioski, Matthew. "Why MIT Institutionalized the Avant-Garde: Negotiating Aesthetic Virtue in the Postwar Defense Institute." *Configurations* 21, no. 1 (2013): 85-116.

Suggested Reading:

A Second Modernism : MIT, Architecture, and the 'techno-social' Moment. Edited by Arindam Dutta. 2013.

Harwood, John. *The Interface : IBM and the Transformation of Corporate Design, 1945-1976.* Minneapolis: University of Minnesota Press, 2011.

Roland, Alex, Shiman, Philip. *Strategic Computing : DARPA and the Quest for Machine Intelligence, 1983-1993.* Cambridge, Mass.: MIT Press, 2002.

Week 6 - Platforms (begin student presentations)

Using two seminal projects in architecture, Cedric Price's unbuilt Fun Palace and the

Architecture Machine Group's Aspen Movie Map, the idea of a platform will be examined. Central to both projects is the architectural use of the computer to create a kind of mobility, both "virtual" and "literal."

Projects:
Fun Palace, Cedric Price/Joan Littlewood, 1961
Aspen Movie Map/Media Room, MIT Architecture Machine Group,

Readings:
Mathews, J Stanley. "The Fun Palace : What Went Wrong?" In *From Agit-prop to Free Space : The Architecture of Cedric Price.* London: Black Dog Pub. Ltd., 2007.
Price, Cedric, and Joan Littlewood. "The Fun Palace." *The Drama Review: TDR* 12, no. 3 (1968): 127-134.

Scott, Felicity Dale Elliston. "Dataland (and Its Ghosts) Aspen Proving Grounds." *The Aspen complex* (2012): 158-184.

Week 7 - Installations

This week the intersection of art and architecture will be the key focus. Mediating this intersection was the use of the computer and the expansion of architectural practice into an expanded field of collaborations with artists and technologists. The idea of "software" had become a metaphor for the production of a unique set of environmental effects conditioned by technology and architecture.

Projects:
Software; Information Technology: Its New Meaning for Art [exhibition], curated by Jack Burnham, 1970
Pepsi Pavilion, Osaka Expo '70, E.A.T., 1970

Readings:
Baker, Jeremy. "Expo and the Future City." *Architectural Review/Expo 67* CXLII, no. 846 (1967): 151-154.

Burnham, Jack W. "The Aesthetics of Intelligent Systems." *On the future of art* (1970): 95-122.

Furuhata, Yuriko. "Multimedia Environments and Security Operations: Expo '70 As a

Laboratory of Governance." *Grey Room* 54 (2014): 56-79.

Scott, Felicity. "DISCOURSE, SEEK, INTERACT: Urban Systems at MIT." *A second modernism : MIT, architecture, and the 'techno-social' moment* (2013): 342-393.

Suggested Readings:

Burnham, Jack. *Software; Information Technology: Its New Meaning for Art.* New York: American Motors Corporation, Smithsonian Institution, and the Jewish Museum, 1970.

Goodyear, Anne Collins. "Expo '70 As Watershed: The Politics of American Art and Technology." *Cold War modern : design 1945-1970* (2008): 198-203.

Klüver, Billy, Julie Martin, Barbara Rose, Experiments in Art and Technology. *Pavilion.* New York: E.P. Dutton, 1972.

Youngblood, Gene. *Expanded Cinema.* New York: Dutton, 1970.

Week 8 - Constructions/Projections

This class will focus on one of the architectural successors to the Fun Palace, the Pompidou Center by Rogers & Piano. More or less conceived as a platform for media, information and technology, the Pompidou became in the end only a monument to these aspirations. In contrast Stan Vanderbeek's Movie-Dromes (dome like structures for multi-media presentations) were conceived as similar platforms for media and information but were ephemeral constructions built for temporary events in an art context. Many of the ideas introduced in weeks 6 and 7 will be seen to continue and develop in this pair of projects.

Projects:
Pompidou Center, Richard Rogers & Renzo Piano, 1971-77
Movie-Drome, Stan Vanderbeek, 1963-65

Readings:
Banham, Reyner. "Enigma of the Rue Du Renard {Centre Pompidou, Paris} Criticism." *Architectural Review* 161 (1977): 277-78.

Baudrillard, Jean. "The Beaubourg-Effect: Implosion and Deterrence." In *Rethinking*

Architecture : A Reader in Cultural Theory, edited by Neil Leach. 210-18. New York: Routledge, 1997.

Sutton, Gloria. "Stan VanDerBeek's Movie-Drome: Networking the Subject." In *Future Cinema : The Cinematic Imaginary After Film.* Edited by Jeffrey Shaw, Peter Weibel and Karlsruhe Zentrum für Kunst und Medientechnologie. Cambridge, Mass.; London: MIT Press, 2003.

Vanderbeek, Stan. "Culture: Intercom" and Expanded Cinema: A Proposal and Manifesto." *The Tulane Drama Review* 11, no. 1 (1966): 38-48.

Youngblood, Gene. "Artist As Ecologist." In *Expanded Cinema.* New York: Dutton, 1970.

Week 9 - Algorithms/Surfaces (blobs and blurs)

As a conclusion to the class we will look at two contemporary projects that demonstrate a clear lineage with projects from the 60s and 70s as well as show a transformation in how the computer is used in architecture as a generator of form and environment. Students will be asked to consider ideas of technological determinism, disciplinarity and autonomy in architecture. Where does architecture "end" and media/technology/design begin? Are these disciplinary distinctions even useful any more?

Projects:
Embryological House, Greg Lynn, 1997
Blur Building, Diller Scofidio, 2002

Readings:

Carpo, Mario. "The Fall." *The alphabet and the algorithm* (2011): 81-120.

Lynn, Greg. "Why Tectonics Is Square and Topology Is Groovy." In *Folds, Bodies & Blobs : Collected Essays.* [Bruxelles]: La Lettre volée, 1998, 169-182.

Martin, Reinhold. "Subjects: Mass Customization." *Utopia's Ghost : Architecture and Postmodernism, Again* (2010): 123-145.

Palma, Vittoria Di. "Blurs, Blots and Clouds: Architecture and the Dissolution of the Surface." *AA Files* , no. 54 (2006): 24-35.

Suggested Readings:

Diller, Elizabeth and Ricardo Scofidio. *Blur : The Making of Nothing.* New York, N.Y.: Harry N. Abrams, 2002.

Week 10 - paper presentations

New Course Proposal

Architecture & Urban Design 98T
Software Cultures and Augmented Design: Architecture, Media, and Computers

Course Number Architecture & Urban Design 98T

Title Software Cultures and Augmented Design: Architecture, Media, and Computers

Short Title MEDIA AND COMPUTER

Units Fixed: 5

Grading Basis Letter grade only

Instructional Format Seminar - 3 hours per week

TIE Code SEMT - Seminar (Topical) [T]

GE Requirement Yes

Major or Minor Requirement No

Requisites Enforced: Satisfaction of entry-level Writing requirement. Freshmen and sophomores preferred.

Course Description Seminar, three hours. Enforced requisite: satisfaction of Entry-Level Writing requirement. Freshmen/sophomores preferred. Examination of intertwined histories of computers and architecture dating from early 1960s, where architecture, computation, media, and art intermingle to produce unique buildings, proposals, and technologies. Letter grading.

Justification Part of the series of seminars offered through the Collegium of University Teaching Fellows.

Syllabus File *AUD 98T syllabus.pdf* was previously uploaded. You may view the file by clicking on the file name.

Supplemental Information Professor Sylvia Lavin is the faculty mentor for this seminar.

Grading Structure Participation 20%
Group Presentations 15%
Reading Responses 15%
Paper 50%

Effective Date Winter 2015

Discontinue Date Summer 1 2015

Instructor

Name	Title
Randolph Kinsuke Nakamura	Teaching Fellow

Quarters Taught ☐ Fall ☐ Winter ☐ Spring ☐ Summer

Department Architecture & Urban Design

Contact

Name	E-mail
CATHERINE GENTILE	cgentile@oid.ucla.edu

Routing Help

ROUTING STATUS

Role: Registrar's Office

Status: Processing Completed

Role: Registrar's Publications Office - Hennig, Leann Jean (LHENNIG@REGISTRAR.UCLA.EDU) - 56704

Status: Added to SRS on 7/31/2014 10:41:03 AM
Changes: Title, Description
Comments: Edited course description into official version; corrected title.

Role: Registrar's Scheduling Office - Thomson, Douglas N (DTHOMSON@REGISTRAR.UCLA.EDU) - 51441
Status: Added to SRS on 6/30/2014 2:00:16 PM
Changes: Short Title
Comments: No Comments

Role: FEC School Coordinator - Castillo, Myrna Dee Figurac (MCASTILLO@COLLEGE.UCLA.EDU) - 45040
Status: Returned for Additional Info on 6/12/2014 11:35:36 AM
Changes: No Changes Made
Comments: Routing to Doug Thomson in the Registrar's Office.

Role: FEC Chair or Designee - Upton, Dell (DUPTON@HUMNET.UCLA.EDU) - 68370
Status: Approved on 6/11/2014 1:30:53 PM
Changes: No Changes Made
Comments: No Comments

Role: FEC Chair or Designee - Castillo, Myrna Dee Figurac (MCASTILLO@COLLEGE.UCLA.EDU) - 45040
Status: Returned for Additional Info on 6/2/2014 4:06:04 PM
Changes: No Changes Made
Comments: Routing to Dell Upton for FEC approval.

Role: CUTF Coordinator - Gentile, Catherine (CGENTILE@OID.UCLA.EDU) - 68998
Status: Approved on 5/19/2014 3:57:10 PM
Changes: No Changes Made
Comments: on behalf of Professor Kathleen L. Komar, chair, CUTF Faculty Advisory Committee

Role: Initiator/Submitter - Gentile, Catherine (CGENTILE@OID.UCLA.EDU) - 68998
Status: Submitted on 5/19/2014 3:56:26 PM
Comments: Initiated a New Course Proposal

Back to Course List

Comments or questions? Contact the Registrar's Office at
cims@registrar.ucla.edu or (310) 206-7045