

Expanded Theater: Applying advanced research to new performance contexts

Fall 2015 Syllabus for ART 60446/60746 DRA 54498/54798

T/Th 10:30-12:20 + F 10:00-1:50, Hunt Library Media Lab

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Instructors

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Class time

- T/R 10:30 am - 12:20 pm Lecture
- F 10 am - 1:50 pm Lab

Location

- Integrative Media Program at Steiner Studios
- Hunt Media Lab, Pittsburgh Campus
- Remote learning connections between both campuses as necessary

Course description

As the boundaries between theater, art, entertainment and everyday life continue to expand through engagement with new technologies, it is critical that emerging artists and technologists be provided with the tools, language, and vision to thrive in the new millennium. As part of Carnegie Mellon's Integrated Media Program based in Pittsburgh and New York City, Expanded Theater will reanimate classical modes of performance with media, networks, robotics, locative applications, and mobile systems.

Considering theater as an ancient technology of mass participation and social cohesion, this fusion studio explores how emerging technologies can expand upon the basic theatrical relationships in new and culturally relevant ways. Collaboration and integration of design, media and storytelling is critical to this approach. Experimentation with new forms can reanimate the basic values of theater; the essential nature of a live event, the possibility of visionary spectacle, and the creation of meaning in dialogue with an audience.

By providing a true laboratory environment with access to advanced computational, fabrication and production resources, Expanded Theater brings students, faculty and researchers from across diverse disciplines into collaborative research and production that explore how technology and narrative intersect in the cultural sphere. Expanded Theater leverages a wide range of networks and venues in New York City to push projects from proof of concept into real-world applications that generate meaning and impact culture.

Expanded Theater is an opportunity to explore avenues outside of traditional theatrical production modes and beyond each student's individual discipline. The curriculum combines resources from Carnegie Mellon's Schools of Art and Drama, Integrative Design, Arts, and Technology (IDeATe), the Emerging Media Masters (EM2), Computer Science, the Robotics Institute, and their collaborators across the university in a new configuration. Expanded Theater will explore domains ranging from site specific and networked-based performance and interventionist practices, to pervasive social media technologies and their influence on interpersonal communication. The goal is to investigate contemporary languages that allow authors, actors and technologists to collaborate in ways that push beyond our present understanding of theatrical production and reception.

This course alternates between two modes: 1) research: a discursive seminar format where the class collectively researches , analyzes, presents and discusses relevant contemporary directions. 2) design: a series of short production experiments that culminate in a dual performance--the first in the black box theater at CMU's NYC facilities, and the second (if appropriate) in a public setting within the city.

Expanded Theater investigates the following questions:

- How can social media evolve as a performance platform?
- How can we create new performance experiences that connect proscenium theater to public spaces?
- How can we lower the bar for creating experiences of expanded theater (by creating new instruments and methodologies), while raising the bar for what new performance with technology tries to achieve (beyond advertising, consumerism, and spectacle)?

Expanded Theater's theoretical approach:

- Reconceiving audiences as co-creators, engaged citizens, and emancipated spectators.
- Reimagining liveness in a radically interconnected digital world.
- Spectacle and politics: questioning the influence of entertainment technologies and industries on the relevance of theater in contemporary culture.

Expanded Theater's technologies:

- Design and fabrication of mobile and rapidly deployable performance instruments in real-world situations.
- Mixed Realities and Immersive Environments, including virtual and augmented reality, black box performance, and installation art.
- Actor-centric technologies including performance capture, gestural control and real-time generative audio and video.
- Developing new technologies for remote creative collaboration.

Learning Objectives

- Discover, evaluate and integrate emerging technologies into on-stage and off-stage performative contexts.
- Analyse and design strategies to employ emerging media in theatrical applications.
- Develop familiarity with current trends in mediaturgy (media in a performance context) and the role theater plays in a media saturated culture.
- Develop practical knowledge on creating media systems at theatrical scale.
- Cultivate the ability to work collaboratively with researchers from diverse backgrounds working with media technologies employed across theater, including computer scientists, engineers, designers and fabricators.
- Be exposed to a wide variety of hardware and software systems, their strengths and weaknesses, that will fuel their future studies and work
- Identify and make contributions to an aspirational community that is engaged in researching, developing and utilizing new approaches to theatrical media
- Conceive possibilities for how these ideas impact their role as makers, and discover fruitful avenues for future work.

Prerequisites and Essential Skills

- Skills for designing complex computer assisted installations of video projectors, screens, walls and lighting to maximize theatrical effect and dramatic content.
- A solid understanding of basic photographic concepts, including depth of field, aperture, shutter speed, exposure, composition and the aesthetics of their relationships.
- A clear sense of proper digital workflow, understanding of the various digital video standards and their strengths and weaknesses.
- Skills in working with a variety of camera types, from surveillance cameras, digital SLR's to high-end HD video cameras, and the reasons for choosing each.
- Skills in working with media networking technologies to create new opportunities for performative experiences in urban settings.

Course Units and Hours

Twelve (12) units split between two 80 min lectures and a 4 hour lab and the expectation of 5 hours of out of class work.

Grading Rubric

The course includes several graded components: analysis paper and presentation, exploratory sketches, final productions; these components are described below. Each student is evaluated on a scale of 0 to 3 (not yet competent, competent, sophisticated, masterful), separately for teamwork, research, . This rubric allows 6 possible points for each assignment. The scores for each component are weighted accordingly to allow analysis, exploration and production to contribute 20%, 30% and 50% respectively to the final grade.

	Not Yet Competent	Competent	Sophisticated	Masterful
Teamwork	Team has little cohesion, poor communication between members	Team has energy but roles and direction are unclear	Team is enthusiastic and each member is contributing fully	Team is vibrant and cohesive; work bears the mark of thoughtful collaboration and execution
Research	Research is weak, does not support the text, or is not properly analyzed	Uses good but unoriginal research, makes correct but basic conclusions	Well thought through selection of research, critical use of material, deep analysis	Uncovers something conceptually dynamic/ unknown/ unexpected within the material
Organization and use of ideas and research	Ideas and research poorly-constructed or difficult to follow	Logical flow of ideas and use of research clearly defined, makes basic use of material	Ideas and research organized conceptually with a clear connection between research and ideas appearing in the project	Ideas appear to flow from the research “naturally” or “organically”. Original ideas generated from research and appearing in the project
Style and Vision	Communication problems, a lack of competency with the execution of the group project	Awkward ideas with sporadic points of interest, lack of grace or fluidity	Excellent communication of all ideas within the project. Combining research and ideas to form well executed piece of theater	Original and unique theater piece, particularly elegant or otherwise pleasing, with original ideas and an original point of view
Readings: Understanding of text.	Does not understand the text	Demonstrates a reasonable understanding of the text	Demonstrates a critical understanding of the text	Adds something new and thoughtful to general understandings of the text

Readings: Discussion	Does not participate in the conversation	Participates but demonstrates a superficial understanding	Actively participates, demonstrates understanding and incorporation of ideas from the text	Actively participates and comprehends the text, listens and responds to others. Adds to a lively discussion.
Execution & Production	Inadequate	Sufficient	Good	Excellent
Presentation & Documentation	Inadequate	Sufficient	Good	Excellent

Assessment of student achievement will be based on:

1. *Analysis (20%)*: A mediaturgical analysis of a piece of expanded theater that considers how the media technologies are conceived, employed, and expanded. This analysis will be presented as a 5-7 page paper due within the first quarter of the semester.
2. *Exploratory Sketches (30%)*: Students will approach a singular research topic through three different mediaturgical perspectives on performance (Reality Computing, Mediated Realities, Urban Theater); these sketches may be conceived for one of three venues: a black box theater, a gallery, or a public space/urban setting.
3. *Final Production (50%)*: Students will collaboratively produce a work for a public performance that employs theories and techniques covered in the semester. Students are expected to work in diverse groups made up of artists, designers and engineers, in order to devise and create a production that makes significant contributions to expanded theater research. These productions will be produced in one of three venues: the on-site black box theater, a gallery, or a public space/urban setting.

Course Overview

Expanded Theater is a year-long curriculum deployed in two parts. The first part, delivered in the fall semester, focuses on development media hardware and software techniques and creating exploratory sketches that situated these technologies in new performance context. The second part of the course, delivered in the spring semester, implements a rigorous production sequence that iteratively develops several productions and culminates in public performances.

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The fall semester alternates between research and design phases that explore the possibilities of a particular media technology (e.g. projection mapping, real-time video processing, dimensional imaging, Mixed Reality, etc), and then employ them in a performative sketch critiqued by outside reviewers. This an advanced course where students will work in groups to realize projects that are both technically complicated and relevant as contemporary performance works. Through group work students will share skills and build effective languages and methods for collaboration. The semester culminates in a three-week final project sketch that gives students the opportunity to integrate several technologies and methodologies into a new performative context.

Calendar and Weekly Overview

Please refer to [this document](#) for the calendar and weekly overview.

Week 1 & 2: Overview: Theories and Applications of Cross-media Performance Practices

This section introduces innovative approaches to contemporary performance and new ways of storytelling. Through viewings, readings, and discussion of cross-media performances staged in venues from theaters to public spaces and online networks, students gain an overview to key practices in 21st century storytelling. The meanings of media as a vehicle for content as well as design will be discussed with a particular emphasis on collaboration between different fields. Creating a generative model for experimentation and cross-pollination between students from Computer Science and Robotics and students from the Schools of Art and Drama is a collaboration which is at the heart of IDEATe. Theater is a form created only in collaboration between disciplines, and these practices are key to generating integrated new forms.

Contemporary techniques for collaboration will be traced through viewing the following works:

Site Specific Performance:

Blast Theory <http://www.blasttheory.co.uk/our-work/>

Gob Squad “Western Society” (2013) <http://www.gobsquad.com/>

Diller, Scofidio + Renfro <http://www.dsrm.com/>

Large Scale Spectacle

Robert LePage The Ring Cycle (2011-2013)

Chunky Moves “An Act of Now” (2012)

The Builders Association “House/Divided” (2012)

Live Data / Networked Performance

Mark Hansen and Ben Rubin: Listening Post, Real-Time Data Responsive Environment 2001-

<https://www.youtube.com/watch?v=dD36IajCz6A>

Kyle Macdonald’s work: <http://www.kylemcdonald.net/>

Aaron Koblin’s Wwork: <http://www.aaronkoblin.com/>

New Paradise Laboratories, Fatebook- <http://www.fatebooktheshow.com/>

Texts

For Discussion on Tuesday Sept 8th:

Simmel, Georg, *The Metropolis and Mental Life*. 1903.

Debord, Guy, *Society of the Spectacle* (excerpts), New York, Zone Books 1994

Debord, Guy, *Towards a Situationist International* (excerpt), 1957

Terry Eagleton, *Cultural Technology and the Avant Garde*, Transcript from Cult 2001 Copenhagen, 2001

For Discussion on Tuesday Sept 15th:

Ranciere, Jacques, *The Emancipated Spectator*, Artforum March 2007

Extra Readings:

McLuhan, Marshall, Quentin Fiore, and Jerome Agel. *The Medium Is the Massage*.

New York: Bantam, 1967.

Marvin, Carolyn, *Dazzling the Multitude: Original Media Spectacles*; When Old Technologies Were New,

Oxford University Press; Reprint edition (May 24, 1990)

Turkle, Sherry, *Always-on/always-on-you: The Tethered Self*. *Academia.edu*. 2006.

Starting from Zero, Ariane Mnouchkine

Pang, Alex; *The Distraction Addiction* (Excerpts) Little, Brown and Company; August 20, 2013

Burry, Alexander, *Russian Experimental Performance & Theater*. from *The Russian avant-garde and radical Modernism*.

2012, Ioffe & White editors

Week 2: Advanced Media Techniques - Generative video, Projection Mapping, real-time processing

The advent of powerful graphics cards and increasing coding literacy has lead to a flourishing of custom video processing software, providing relatively inexpensive access to sophisticated “real-time” generation and manipulation of video content. These techniques have been rapidly taken up in advertising but have the potential to open up new visual conventions for

audience participation and meaning creation in live events. We will examine a variety of software/hardware combinations, evaluate their capabilities and identify avenues for new coding projects. These techniques will be placed in context with the history of abstraction in art, through readings and screenings. Students will break into groups and create interior and exterior projection mapped environments inspired by three literary works.

Extra Texts

Krauss, Rosalind. *Grids*; October, Vol. 9 (Summer, 1979)
Lewitt, Sol. *Matrix*; Catalog essay, Berkeley 1963
Joseph, Brandon w. *The Tower and the Line: Toward a Genealogy of Minimalism*; Grey Room 27, Spring 2007, pp. 58–81. © 2007
Halley, Peter; *Abstraction and Culture & Geometry and the Social*; Peter Halley Selected Essays 1981-2001, Edgewise, 2003
Bridget Riley; *Perception is the Medium*, 1965; *Abstraction, Documents of Contemporary Art*; Co-published by Whitechapel Gallery and The MIT Press, 2013
Zummer, Thomas. *Projection and Disembodiment: Genealogies of the Virtual*; Into the Light Catalog Whitney Museum; (October 1, 2001)
Tupitsyn, Margarita. *The Grid as a Checkpoint of Modernity*; October 2009; [Tate Papers Issue 12](#)
Pylyshyn, Zenon W.; *Seeing and Visualizing: It's Not What You Think* (excerpts); The MIT Press 2003

Works

1927 - *The Animals and Children took to the Streets* - <https://www.youtube.com/watch?v=RHDYDnhn4Fo>
Generative Art - Computers, Data, and Humanity | Off Book | PBS - <https://www.youtube.com/watch?v=x0OK1GiI83s>
r.luke dubois' work - <http://lukedubois.com/>
Mass Moca Sol Lewitt Retrospective; <http://www.massmoca.org/le Witt/>
Marcel Duchamp's Stoppages; http://www.moma.org/collection/object.php?object_id=78990
In-class Procedural Drawing exercises, based on : <http://www.basilsafwat.com/projects/processing.a4/>
and: <https://www.flickr.com/photos/edburton/sets/72157631382581332/>

Week 3 Mediaturgy: Emancipated Spectators

Discussion of The Emancipated Spectator by Jacques Ranciere. Student presentation of Friday works, to be delivered as a 5min presentation and a paper.

Week 5-6: Mixed Reality

This section investigates theatrical implications and possibilities within the continuum of mixed reality--from real environments, through augmented reality (AR) and augmented virtuality (AV), to virtual environments (VR). Readings and graded exploratory sketch require students to study theories and repertoire of mixed reality in theater, to familiarize themselves with the relevant production tools and devise ways to integrate them into theatrical sketches that are motivated by narrative.

Texts

Drascic, D., & MILGRAM, P. (1996). Perceptual issues in augmented reality. *Electronic Imaging: Science & Technology*, 2653, 123–134. doi:10.1117/12.237425
Graham, M., Zook, M., & Boulton, A. (2012). Augmented reality in urban places: contested content and the duplicity of code. *Transactions of the Institute of British Geographers*, 38(3), 464–479. doi:10.1111/j.1475-5661.2012.00539.x
Azuma, R. T. (1997). A survey of augmented reality. *Presence-Teleoperators and Virtual Environments*, 6(4), 355–385.
Starnier, T., Mann, S., Rhodes, B., Levine, J., Healey, J., Kirsch, D., et al. (1997). Augmented reality through wearable computing. *Presence-Teleoperators and Virtual Environments*, 6(4), 386–398.
Mann, S., & Nnlf, S. M. (1994). Mediated reality.
Milgram, P., & Kishino, F. (1994). A Taxonomy of Mixed Reality Visual Displays. *IEICE TRANSACTIONS on Information and Systems*, E77-D(12), 1321–1329.

Works

FutureCinema	http://futurecinema.ca/arlab/
HITlabs	http://arforglass.org/
Elastic Reality	http://www.laboralcentrodearte.org/en/exposiciones/re
AR Magic	http://www.lalalab.org/ar-magic-system/

Exploratory Sketch 2

Create an experience of a real or virtual landscape that is mediated by technology. Use reality-computing technologies (3d scanning, motion capture, photogrammetry, etc.) to blend virtual and real spaces and elements; devise a scripted or generative experience of this space for one person, using video projection, heads-up displays, or virtual reality goggles.

Week 7: Reality Computing

This section explores a variety of ways to create and capture multi-dimensional imagery and data for the use in performance. Simple kinect based depth imagery, broadcast quality synced multi-camera video systems for 3d image capture, and LIDAR scanning systems will be demonstrated and workshopped. Techniques for processing this data and multi projector presentation techniques for live events will be explored. Students will break into groups and explore how these techniques can be employed in the service of meaning creation.

Texts

Burrill, Derek Alexander. *Out of the Box: Performance, Drama, and Interactive Software*; Modern Drama, Volume 48, Number 3, Fall 2005, pp. 492-512 (Article)

Visual Thinking - Online workshop; <http://cft.vanderbilt.edu/guides-sub-pages/visual-thinking/>

Machinima, Second Life and the Pedagogy of Animation -

<http://aburn2012.files.wordpress.com/2014/04/machinima-chapter.pdf>

Works

Langlands and Bell, The House of Osama Bin Laden

<http://www.langlandsandbell.com/the-house-of-osama-bin-laden-video.html>

Aaron Koblin's House of Cards video for Radiohead - <http://www.aaronkoblin.com/work/rh/>

<http://www.mtv.com/videos/radiohead/263678/house-of-cards-concept.jhtml>

Rhizome.org, Artbase - Rendered Reality Collection - <http://rhizome.org/artbase/collections/1/>

Scott Sona Snibbe's artwork - <http://www.snibbe.com/projects/>

Week 8: Performer-centric interfaces

This section introduces theories and practices in human computer interaction applied to performance with technology. Students will work with a variety of newly created interactive tools for performer and audience interaction including the Myo armband for gesture control and kinect based motion tracking. Skills from the previous mixed reality section will be applied to new performance interface development and testing. Readings introduce current trends in performance capture, sensing, and mapping.

Works

Krzysztof Wodiczko Alien Staff: <http://web.media.mit.edu/~jrs/krz/alien.html>

Michel Waisvisz The hands: <http://www.crackle.org/TheHands.htm>

Laetitia Sonami Lady's Glove: <http://sonami.net/works/ladys-glove/>

Max Matthews Radio Batton: <https://ccrma.stanford.edu/radiobaton/>

David Wessel The Slab:

http://cnmat.berkeley.edu/user/david_wessel/blog/2009/01/15/slabs_arrays_pressure_sensitive_touch_pads

Texts

Buxton, W. (1994). Human skills in interface design. *Interacting with Virtual Environments*.

Deyle, T., Palinko, S., & Poole, E. S. (2007). Hambone: A bio-acoustic gesture interface. ... *Computers*. doi:10.1109/ISWC.2007.4373768

Ono, M., Shizuki, B., & Tanaka, J. (2013). Touch & activate (pp. 31–40). Presented at the the 26th annual ACM symposium, New York, New York, USA: ACM Press. doi:10.1145/2501988.2501989

Acoustic Barcodes: Passive, Durable and Inexpensive Notched Identification Tags. (2012). *Acoustic Barcodes: Passive, Durable and Inexpensive Notched Identification Tags*, 1–5.

Wessel, D., & Wright, M. (2002). Problems and prospects for intimate musical control of computers. *Computer Music Journal*, 26(3), 11–22.

Pang, A. (n.d.). Contemplative computing. <http://www.contemplativecomputing.org/>

Week 9: Urban Theater

This section introduces theatrical practices that leverage existing urban systems and infrastructure including power, communication and data networks, retail spaces, media systems, advertising, surveillance and transportation systems. Texts and works investigate a range of contemporary and historical hybrid artistic practices ranging from street theater, architectural video projection, pervasive gaming, tactical media and urban intervention. Students are tasked with imagining ways to interact with the existing social fabric of the city and create some form of theatrical experience.

Texts

- Boal, A., & Epstein, S. (1990). Invisible Theatre: Liege, Belgium, 1978. Tdr, 34(3), 24. doi:10.2307/1146066
- Benford, S., Magerkurth, C., & Ljungstrand, P. (2005). Bridging the physical and digital in pervasive gaming. Communications of the ACM, 48(3), 54–57.
- Capra, M., Radenkovic, M., Benford, S., Oppermann, L., Drozd, A., & Flintham, M. (2005). The multimedia challenges raised by pervasive games. ACM Multimedia, 89–95. doi:10.1145/1101149.1101163
- Jegers, K., & Wiberg, M. (2006). Pervasive gaming in the everyday world. Ieee Pervasive Computing, 5(1), 78–85. doi:10.1109/MPRV.2006.11
- Knabb, K., & DLC, P. A. C. L. O. C. (1981). Situationist International anthology. Berkeley, Calif. : Bureau of Public Secrets.
- Williams, R. (2002). Lewis Mumford's Technics and Civilization. Technology and Culture, 43(1), 139–149. doi:10.1353/tech.2002.0044
- Kaye, N. (2000). Site-Specific Art: Place, Performance and Documentation.
- We Know You Are Watching: Surveillance Camera Players 1996-2006*; (excerpts) Southpaw Culture Factory School, 2006.
- Graham, Dan; *Magazine Pages*, - in Two Way Mirror Power, Selected Writings by Dan Graham on his Art MIT Press 1999

Works

- Ricardo Dominguez <http://bang.transreal.org/transborder-immigrant-tool/>
- Yes Men <http://theyesmen.org/>
- Surveillance Camera Players - <http://www.notbored.org/the-scp.html>
- The Barbie Liberation Organization: <https://www.youtube.com/watch?v=OVT4T7OR3iQ>

Week 10-15: Final project

The final three weeks of the fall semester are dedicated to the production a more developed sketch. Students are asked to consider contemporary techno-cultural facets of life (e.g. overlapping networks, multiple social roles, divided attention, proliferating screens, etc.) as departures to creating a performative sketch in a novel context.