**Course Title**

Augmenting the Gallery

## Course Number

IMNY-UT 9001D01

# Spring 2020

**Syllabus last updated on:** 28 NOV 2019

## Lecturer Contact Information

Pierre Depaz

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## Course Details

Time: Weds 09:15am–12:45pm

Location: St. Agnes (SNTA – Alexandrinenstraße 118–121, 10969 Berlin)

## Prerequisites

None

## Units earned

4

## Course Description

Wall labels, audio guides and informative maps are just some of the ways galleries and museums convey additional information about an art collection. How can we utilize new interactive mixed reality tools to design and deliver immersive experiences that breathe new life into an exhibit?

Augmented and virtual reality are powerful tools for new media production and storytelling, but how can these tools serve to enhance our gallery experience without distracting from the power and importance of a pre-existing collection? This production course seeks to experiment with new ways to experience a museum collection through mixed reality. Topics covered include exhibition installation and curation, mixed reality production in Unity, mobile development for Augmented Reality.

## Course Objective

* Understand the theoretical concepts and challenges of curating and exhibiting artworks.
* Understand the diversity of exhibition spaces and missions in Berlin.
* Learn how to prototype, iterate and integrate relevant mobile digital content within a given exhibition.
* Become familiar with the development workflow in the Unity game engine.
* Acquire a familiarity with Augmented Reality design and development.
* Acquire a familiarity with user-interface design and information delivery on mobile platforms.

## Learning Outcomes

* Curatorial awareness: be able to understand the ideas and intent behind the organization, layout, presentation and layout of a given body of work.
* Design awareness: be able to understand how to structure an application around the principles of human-computer interaction and user-cantered design.
* Real-world implementation: be able to propose and implement a design around a given constraint (i.e., that of a real-world exhibition).
* Technical fluency: be able to develop a basic, functioning mobile application using the Unity Engine and the Augmented Reality toolkits

## Assessment Components

*Technical projects* - 25% Students will have to complete a series of short technical projects in order to develop and demonstrate proficiency with the Unity engine and Augmented Reality workflow. Students will be able to start from an existing tech template and will be expected to present their projects in class on the day that it is due for a group review.

*Participation* - 20% Participation will include (a) in-class discussion of readings and discussion of your classmates’ project presentations, (b) completion of all homework assignments, (c) posting your weekly reading responses online and (d) contribution to the class resources —whether by finding interesting exhibitions in the city, or interesting AR projects not mentioned during class, and sharing them with your instructors and classmates.

*Application design* - 25% - Due March 3 - You will design a digital project proposal for a large-scale institution, by applying your knowledge of both technical development, application design and possibilities of augmentation as seen in class. Your report should include background research on the gallery/museum and the artist(s) exhibited, analysis of the curatorial intent, the practical installation and description of the attendees, and conclude with a proposal for augmenting that specific exhibition. You will submit a PDF of your proposal to your instructor.

*Final project* - 30% - Due May 20 - You will complete a longer project which will be developed throughout the semester in collaboration with Museum4Punkt0. This group project will include (a) pre-emptive analysis of the site and collection that you will be working with, (b) design and development of the Augmented Reality and (c) presentation to the M4P0 team with user-testing and post-production conclusions on the effectiveness and limitations of the application.

Failure to submit or fulfill any required component may result in failure of the class, regardless of grades achieved in other assignments

## Required Text(s)

All required readings will be provided as a digital copy.

## Supplemental Text(s) (not required to purchase)

All supplemental readings will be provided as a digital copy.

## Internet Research Guidelines

To be discussed in class

## Additional Required Equipment

Students are encouraged to work with their laptop and can also use their own smart phones for mobile development. Nonetheless, essential work will take place in the computer lab.

## Session 1 - 05 Feb 2020 - Introduction

*This session focuses in the first half on housekeeping matters, introducing the course materials, learning objectives and technological tools. The second part introduces students to the current state of technology in mixed and augmented reality and will ask some questions about the relationship between the digital and the physical.*

## Session 2 - 12 Feb 2020 - Basics of Unity

*This session dives deeper into the development workflow of Unity, the main software that we will be using for the class. Students will first be invited to show and discuss their homework and reflect on the invisible narratives that exist around one single object.*

**Reading:**

* [*The Ultimate Display*](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Sutherland_TheUltimateDisplay.pdf), Ivan Sutherland, Information Processing Techniques Office, https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Sutherland\_TheUltimateDisplay.pdf
* [*A Survey of Augmented Reality*](http://www.cs.unc.edu/~azuma/ARpresence.pdf), R. T. Azuma, Presence, vol. 6, no. 4, pp. 1–18, Jul. 1997. [Online]. Available: http://www.cs.unc.edu/~azuma/ARpresence.pdf.
* [*Unity Tutorials, Interface Essentials*](https://unity3d.com/learn/tutorials/topics/interface-essentials/interface-overview?playlist=17090), Video 1-7, https://unity3d.com/learn/tutorials/topics/interface-essentials/interface-overview?playlist=17090

**Homework (due on that day):** Choose an object. Develop a simple screen interaction which cycles through media assets and provides information about that object. Follow the online tutorial for the code, but use your own assets and descriptions to create your own narrative.

**Lecture:**

* History and principles of Mixed and Augmented Reality.
* Introduction to ARKit/ARCore and setting up a development environment.

## Session 3 - 19 Feb 2020 - Unity and Interaction Design

*This session takes a step back from the hands-on development in Unity in order to look at some design concepts. What is interface design? What is interaction design? What is UX design? We will discuss the specificities and interconnections of all these disciplines in the context of Augmented Reality, as well as practical methods for implementing them.*

**Reading:**

* [The Medium is the Message](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/McLuhan_TheMediumIsTheMessage.pdf)*,* Marshall McLuhan, Gingko Press, 2011, pp.18-35.https://github.com/periode/augmentinggallery/blob/master/resources/readings/McLuhan\_TheMediumIsTheMessage.pdf
* [*A Cultural Approach to Interaction Design*](https://github.com/NYUAD-IM/Comm-Lab/blob/master/Assets/Readings/InventingTheMedium_JanetMurray.pdf), Janet Murray, https://github.com/NYUAD-IM/Comm-Lab/blob/master/Assets/Readings/InventingTheMedium\_JanetMurray.pdf
* [Interaction Design](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Preece_InteractionDesign.pdf), Jenny Preece, Helen Sharp and Yvonne Rogers, Wiley and Sharp, 2019, pp. 20-27, https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Preece\_InteractionDesign.pdf

**Homework (due on that day):** Developan AR application which allows your user to position multiple objects around the physical world. The objects that you choose should tell a broader story about a specific period of your life. You should implement an input for your user to place objects, and UI components to provide feedback and information.

**Lecture:** Interaction Design and Storytelling in the digital age.

## Session 4 - 26 Feb 2020 – The Role of Museums

*This session will focus on exposing and exploring the role of museums as historical and cultural institutions. Why do museums exist? Why do people go to museums? Have museums evolved over time? In which direction? The second part of the session is dedicated to working time on the students’ projects.*

**Reading**:

* [Key Concepts of Museology](https://icom.museum/wp-content/uploads/2018/07/Museologie_Anglais_BD.pdf)*, ed. André Desvallées and François Mairesse, Armand Colin, 2010, articles* Collection *pp. 26-28,* Exhibition *pp. 34-38,* Mediation *pp. 46-48,* Museum *pp.56-60,* Object *pp.61-64. https://icom.museum/wp-content/uploads/2018/07/Museologie\_Anglais\_BD.pdf*
* [*The End of the Museum?*](https://www.jstor.org/stable/3332464)*,* Nelson Goodman, Journal of Aesthetic Education, University of Illinois Press, 1985. https://www.jstor.org/stable/3332464
* [Museums in the Digital Age](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Bautista_MuseumsDigitalAge.pdf), Susanna Bautista, AltaMira Press, 2013, Framing A Changing Museology in The Digital Age, pp.7-30. https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Bautista\_MuseumsDigitalAge.pdf

**Homework (due on that day):** Develop a first application with ARKit using a marker to tell a story about a particular artwork. You can use text, images, 3D models and/or sound.

**Lecture:** The purpose of the museum, the museum and its objects.

## Session 5 - 4 March 2020 – M4P0 – Kick-off Meeting

*This session will revolve around the presentation of the Museum4Punkt0 research project, and will introduce students to use-cases that they will work on throughout the semester.*

**Reading**:

* [Museum4Punkt0](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Glinka_Museum4Punkt0.pdf), Katrin Glinka, in ICOM, vol 70, 2018. https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Glinka\_Museum4Punkt0.pdf

**Homework (due on that day): N/A**

**Lecture:** Introduction to M4P0 and use cases to work on. Formation of groups.

## Session 6 - 11 March 2020 – Augmenting Objects

*This session will focus on the idea and the reality of what an “object” is. What are some of the visible properties of an object? What are the invisible ones? If objects also symbolize things beyond themselves, how can we use AR and digital technology to bring those aspects to the forefront?*

**Reading**:

* *Artefacts and the Meaning of Things*, Daniel Miller, Routledge, 1994, pp. 396-147
* *Radical Technologies: The Design of Everyday Life*, Adam Greenfield, Verso, 2017.

**Homework (due on that day):** Brainstorm ideas from your M4P0 use case and post them on your blog. Be prepared to come and discuss them in class.

**Lecture:** The life cycle of an exhibition: curation, installation, presentation, communication.

## Session 7 - 18 March 2020 – Augmenting Spaces

*This session will focus on how AR can modify our perception of public space, starting from definitions of what public is, and how/if it is manifested in museums. We will use this opportunity to explore further the social dynamics of art-gallery owners and museum-goers, in terms of sociology and psychology, and compare it to the sociology and psychology of individual app users.*

**Reading**:

* [The Poetics of Augmented Space](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Manovich_PoeticsOfAugmentedSpace.pdf), Lev Manovich, Journal of Visual Communication, 2006. https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Manovich\_PoeticsOfAugmentedSpace.pdf
* [*The Street as Platform 2050*](https://medium.com/butwhatwasthequestion/the-street-as-platform-2050-98bbb81016f4), Dan Hill, Medium.com https://medium.com/butwhatwasthequestion/the-street-as-platform-2050-98bbb81016f4

**Homework (due on that day):** Due: design proposal for a chosen exhibition.

**Lecture:** Public space and public use. Museums and their visitors.

## - 25 March 2020 - Spring Break -

## Session 8 - 01 April 2020 – Museums and Information in physical spaces

*This session focuses on laying out the current use of digital media (not limited to AR), ranging from audio guides, to interactive display tables, VR installations and companion applications. We will examine how are museums making the most of digital media and what could be come of the limitations of this approach. The second part of the lecture will focus on how to organize brainstormed ideas into a design document for your M4P0 development project.*

**Reading**:

* N/A

**Homework:** N/A

**Lecture:** Discussion about the reading. Presentation on how to draft the specifics of an interactive project. In-class working session for Design and Technical documents.

## Session 9 - 08 April 2020 – Museums and Information in online spaces

*This session will look at how museums engage in technology that is no longer online. Whether through social media, online access of physical collections or online exploration of non-accessible collections, the Internet has changed the way consider accessibility and information.*

**Reading**:

* [From Malraux's Imaginary Museum to the Virtual Museum](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Battro_VirtualMuseum.pdf), Antonia Battro in Museums in the Digital Age, ed. Ross Perry, Routledge, 2010, pp.136-147. https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Battro\_VirtualMuseum.pdf

**Homework (due on that day):** Start working on an AR application which uses Unity’s API capabilities to interface with the Internet. Come to class ready to discuss your progress.

**Lecture:** Curation and selection of artworks in a limited space. The impact of digital technology and transformed storage and access on collection management.

## Session 10 - 15 April 2020 – Museum and Education

*This session will look at the educational role of museums, focusing on inclusiveness and design for (dis)abilities. The lecture will highlight how it relates to both physical spaces, in the case of cultural institutions, and digital spaces, in the case of application design and development. Students will get an opportunity to look critically at existing projects and at their own projects and assess how inclusive or exclusive they are.*

**Reading**:

* [Distinction](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Bourdieu_Distinction.pdf), Pierre Bourdieu, Distinction: Social Critique of Judgment of Taste, Introduction, MIT Press, 1984. https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Bourdieu\_Distinction.pdf
* *Mismatch: How Inclusion Shapes Design*, Kat Holmes, MIT Press, 2018. Chap. 4 Inclusive Designer, pp. 41-63. (tbd)
* [Museum Education](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/MuseumEducation.pdf), George E. Hein, in A Companion to Museum Studies, 2006, ch. 20, pp. 340-341. https://github.com/periode/augmenting-gallery/blob/master/resources/readings/MuseumEducation.pdf

**Homework (due on that day):** Finish your AR application which makes use of the APIs provided by the instructor.

**Lecture:** Museum as education-providers.Cultural Capital.Accessibility in physical and digital spaces.

## Session 11 - 22 April 2020 – M4P0 Second round

*The session will consist in a first presentation to the M4P0 teams, focusing on the presentation of work-in-progress and feedback-oriented discussions regarding your current progress.*

**Reading**:

* N/A

**Homework (due on that day):** N/A

**Lecture:** N/A

## Session 12 - 29 April 2020 – Augmenting Art Galleries

*This session introduces students to the principles and practices of curating a show for an art gallery. What do curators do? How do they select artists? How do they organize a show spatially and theoretically, by taking into account technical requirements, artistic intent and expected audiences? Why put up a show in the first place? The second part of this session will be dedicated to student work.*

**Reading**:

* [Show and Tell](https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Storr_ShowAndTell.pdf), Robert Storr in What Makes a Great Exhibition?, Paul Marincola, Reaktion Books, 2007. https://github.com/periode/augmenting-gallery/blob/master/resources/readings/Storr\_ShowAndTell.pdf

**Homework (due on that day):** Start working on a shared AR application. Come ready to discuss your progress in class.

**Lecture:** The history an role of the art gallery. Digital media as an integral part of the exhibition process.

## Session 13 - 06 May 2020 – Exhibiting Digital Artworks

*While more and more artworks include a software component, the question of how to present and preserve them has shown to be more and more complicated. How is the exhibition of a piece of software art faithful to its original intent and situation?*

**Reading**:

* [Presenting and Preserving New Media](http://www.neme.org/texts/preserving-new-media), Christiane Paul in Digital Art, Thames and Hudson, 2007. http://www.neme.org/texts/preserving-new-media
* [*Objects, Intent, and Authenticity: Producing, Selling, and Conserving Media Art*](https://www.taylorfrancis.com/books/9781315597898/chapters/10.4324/9781315597898-8), Caitlin Jones, in New Collecting: Exhibiting and Audiences after New Media Art, Routledge, 2016.

**Homework (due on that day):** Finish your shared AR application.

**Lecture:** Exhibition and preservation of digital artworks.

## Session 14 - 13 May 2020 – Work Session

*This session will be dedicated to in-class working time in expectation of the presentation next week.*

**Reading**:

* N/A

**Homework (due on that day):** Put the final touches on development of your project. If necessary, make an office hour appointment with your instructor for specific advice and debugging. Finalize your presentation for M4P0and include a short presentation and video of the application running on your device.

**Lecture:** N/A, course evaluations.

## Session 15 - 20 May 2020 – M4P0 Presentations

Final session, course evaluations.

## Classroom Etiquette

Laptops are not allowed during class time, unless we are working on technical aspects of the course, since they distract not just you, but classmates as well. In order to avoid unnecessary printing of materials, students are encouraged to take notes from readings and write down questions as preparation for class discussions.

## Suggested Co-Curricular Activities

Students are strongly suggested to visit museums and galleries in the city on their own, outside of the required class visits. The museum and gallery scene in the city is an incredibly diverse array of curatorial projects, materials, histories and approaches. Some recommended visits will be listed on the class website, but feel free to add to that list by editing the wiki.

## Your Lecturer

Pierre Depaz is an educator, artist and programmer from France. He's taught at NYU and CUNY and is currently a Lecturer at NYU Berlin and Sciences Po. He is interested in the multiple ways computers are attempting to represent and interface with human concepts and emotions. His academic research revolves around simulation, semantics and public organization through technological means, while his artistic practice includes digital games, computer simulations, interactive installations, networked performances and experimental web projects, and has been exhibited in NYC, Paris, Cairo, Abu Dhabi, Brussels and Berlin.

# Academic Policies

## Assessment Expectations

**Grade A:** The student makes excellent use of empirical and theoretical material and offers well-structured arguments in their work. The student writes comprehensive essays / answers to exam questions and their work shows strong evidence of critical thought and extensive reading.

**Grade B:** The candidate shows a good understanding of the problem and has demonstrated the ability to formulate and execute a coherent research strategy.

**Grade C:** The work is acceptable and shows a basic grasp of the research problem. However, the work fails to organize findings coherently and is in need of improvement.

**Grade D:** The work passes because some relevant points are made. However, there may be a problem of poor definition, lack of critical awareness, poor research.

**Grade F:** The work shows that the research problem is not understood; there is little or no critical awareness and the research is clearly negligible.

## Grade Conversion

Your lecturer may use one of the following scales of numerical equivalents to letter grades:

A = 94-100 or 4.0

A- = 90-93 or 3.7

B+ = 87-89 or 3.3

B = 84-86 or 3.0

B- = 80-83 or 2.7

C+ = 77-79 or 2.3

C = 74-76 or 2.0

C- = 70-73 or 1.7

D+ = 67-69 or 1.3

D = 65-66 or 1.0

F = below 65 or 0

## Attendance Policy

Participation in all classes is essential for your academic success, especially in courses that meet only once per week. Your attendance in both content and language courses is required and will be checked at each class meeting. As soon as it becomes clear that you cannot attend a class, you must inform your professor by e-mail immediately (i.e. before the start of your class). Absences are only excused if they are due to illness, religious observance or emergencies. Your professor or NYU Berlin's administration may ask you to present a doctor's note or an exceptional permission from NYU Berlin's Director or Wellness Counselor as proof. Emergencies or other exceptional circumstances must be presented to the Director. Doctor's notes need to be submitted to the Academics Office, who will inform your professors. Doctor's notes need to be from a local doctor and carry a signature and a stamp. If you want the reasons for your absence to be treated confidentially, please approach NYU Berlin's Director or Wellness Counselor.

Unexcused absences affect students' grades: In content courses each unexcused absence (equaling one week's worth of classes) leads to a deduction of 2% of the overall grade and may negatively affect your class participation grade. In German Language classes two or three (consecutive or non-consecutive) unexcused absences (equaling one week's worth of classes) lead to a 2% deduction of the overall grade. Three unexcused absences in one content course and five unexcused absences in your German language course may lead to a Fail in that course. Being more than 15 minutes late counts as an unexcused absence. Furthermore, your professor is entitled to deduct points for frequent late arrival or late arrival back from in-class breaks. Please note that for classes involving a field trip, transportation difficulties are never grounds for an excused absence. It is the student’s responsibility to arrive in time at the announced meeting point.

Exams, tests and quizzes, deadlines, and oral presentations that are missed due to illness always require a doctor's note as documentation. It is the student's responsibility to produce this doctor's note and submit it to the Academics Office; until this doctor's note is produced the missed assessment is graded with an F and no make-up assessment is scheduled. In content classes, an F in one assignment may lead to failure of the entire class.

Regardless of whether an absence is excused or not, it is the student's responsibility to catch up with the work that was missed.

## Attendance Rules on Religious Holidays

Members of any religious group may, without penalty, excuse themselves from classes when required in compliance with their religious obligations. Students who anticipate being absent due to religious observance should notify their lecturer AND NYU Berlin's Academics Office in writing via e-mail one week in advance. If examinations or assignment deadlines are scheduled on the day the student will be absent, the Academics Office will schedule a make-up examination or extend the deadline for assignments. Please note that an absence is only excused for the holiday but not for any days of travel that may come before and/or after the holiday. See also [University Calendar Policy on Religious Holidays](http://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-calendar-policy-on-religious-holidays.html)

## Late Submission of Work

1. Written work due in class must be submitted during the class time to the professor.
2. Late work should be submitted in person to the lecturer or to the Academics Office, who will write on the essay or other work the date and time of submission, in the presence of the student. Another member of the administrative staff may also personally accept the work and will write the date and time of submission on the work, as above.
3. Work submitted late receives a penalty of 2 points on the 100 point scale for each day it is late (excluding weekends and public or religious holidays), unless an extension has been approved (with a doctor's note or by approval of NYU Berlin's administration), in which case the 2 points per day deductions start counting from the day the extended deadline has passed.
4. Without an approved extension, written work submitted more than 5 days (excluding weekends and public or religious holidays) following the submission date receives an F.
5. End of semester essays must be submitted on time.
6. Students who are late for a written exam have no automatic right to take extra time or to write the exam on another day.
7. Please remember that university computers do not keep your essays - you must save them elsewhere. Having lost parts of your essay on the university computer is no excuse for a late submission.

## Provisions for Students with Disabilities

Academic accommodations are available for students with documented disabilities. Please contact the Moses Center for Students with Disabilities at 212-998-4980 or see their [website](https://www.nyu.edu/students/communities-and-groups/students-with-disabilities.html) for further information.

## Plagiarism Policy

The presentation of another person’s words, ideas, judgment, images or data as though they were your own, whether intentionally or unintentionally, constitutes an act of plagiarism. Proper referencing of your sources avoids plagiarism (see as one possible help the [NYU library guide](http://nyu.libguides.com/citations) to referencing styles.

NYU Berlin takes plagiarism very seriously; penalties follow and may exceed those set out by your home school. Your lecturer may ask you to sign a declaration of authorship form.

Note that some assignments in the course may be checked for plagiarism by using TurnItIn or other another software designed to detect offences against academic integrity.

It is also an offense to submit work for assignments from two different courses that is substantially the same (be it oral presentations or written work). If there is an overlap of the subject of your assignment with one that you produced for another course (either in the current or any previous semester), you MUST inform your professor.

For a summary please follow the link to [NYU Global's academic policies](http://www.nyu.edu/global/academic-policies).