

COMM 690 / ARTS 490

**Movie Making Machines: Learning About Cinema in the BeAM Space**

Hanes Art Center - Rm 112

MW 9:05 - 10:45 AM

Instructors:

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**COURSE DESCRIPTION:**

Though we generally think of movies as the result of the work of screenwriters, cinematographers, actors, and directors, movies are also the product of a range of scientific and technological concepts and innovations. The magic of the movies begins with the technologies that make moving images possible. This projects-based seminar will introduce students to the fundamental optical and technological principles of motion pictures. By using the UNC BeAM Space to design and fabricate cameras, lenses, film strips, and movie projectors, students will gain a deep understanding of the material and technological foundations of the cinema, and the operating principles that are behind not only the classic films of Hollywood's past, but the high-definition digital imaging technologies of the present.

**COURSE OBJECTIVES:**

Over the semester, students will learn about the history and science of early cinema through lectures and readings while delving into the principles of photography, movie film, movie cameras, and movie projectors. They will explore the wonderful world of pre-cinematic optical toys by designing and fabricating a zoetrope, a pre-cinema optical device that creates simple animated effects. They will use digital modeling software to fabricate a pinhole camera, and will use the darkroom to hand-process the photographic images they make. They will use the laser cutter to etch their own 16mm movie film, and will explore the transformation of serial still images into motion pictures. Through these projects, students may invent new cinematic machines that we have not yet begun to imagine, and that are made possible with the use of the innovative tools at UNC's BeAM Space.

Student learning objectives in the course include:

- Introduction to the fundamental technical principles of photography, cinematography, and motion picture projection.
- Introduction to the history of photo and motion picture technology.
- Mastery of 3D modeling software, and foundation in the principles of design.
- Mastery of the 3D printer, laser cutter, and other technologies in the BeAM Space.
- Knowledge of the operating aesthetic principles of photographic composition.
- Knowledge of the operating aesthetic principles of animation and time-based media.

- Ability to evaluate design choices and outcomes.
- Ability to evaluate image-making choices and outcomes.
- Analysis of the artistic implications of image-making technologies.
- Analysis of the ways technology defines, delimits, and extends artistic imagination

**Required Texts:**

*Action! Professor Know-It-All's Illustrated Guide To Film & Video Making* – Bill Brown (Microcosm Publishing, 2010)

**Supplies:**

photo paper  
16mm black leader

**Grading Distribution:**

Project 1: Presentation	5%
Project 1: Final	20%
Project 2: Presentation	5%
Project 2: Final	20%
Project 3: Presentation	5%
Project 3: Final	20%
Class Participation:	10%
Quiz:	15%

**NB:** Instructors reserve the right to raise or lower final grade based on class participation, citizenship, and attendance. Instructors also reserve the right to revise the syllabus during the semester.

**Attendance Policy**

Absence may make the heart grow fonder, but it hurts your grade. Attendance will be taken at the beginning of every class meeting. More than 3 unexcused absences will result in a letter grade deduction from your final mark.

In the event of an unforeseen absence, please review UNC’s policy on absence notification here: <https://deanofstudents.unc.edu/faculty-staff/student-class-absence-notifications>

**Academic Honesty**

Academic honesty is a cornerstone of the academy. It is also one of the fragile pillars on which civilization itself is precariously perched. Please review UNC’s honor code here: <https://studentconduct.unc.edu/faculty/honor-syllabus>

**COURSE CALENDAR:**

**WK1**

**01/10** INTRODUCTIONS

**WK2**

**01/15** **MLK DAY – No Class**

**01/17** BEAM Space Orientation / Tour

**WK 3**

**01/22** A BRIEF HISTORY OF PHOTOGRAPHY

SCREEN *Photo: The Inventors* (Juliette Garcias, 2013)  
[http://fod.infobase.com.libproxy.lib.unc.edu/p\\_ViewVideo.aspx?xtid=53596](http://fod.infobase.com.libproxy.lib.unc.edu/p_ViewVideo.aspx?xtid=53596)  
Principles of the Photographic Image

**01/24** THE PINHOLE CAMERA: THEORY AND PRACTICE

DEMO LASER CUTTER  
<http://www.instructables.com/id/How-to-create-a-laser-cut-file-in-Illustrator/>

**WK4**

**01/29** THE PINHOLE CAMERA: DESIGN PRESENTATION / IDEATION

READ  
<https://www.interaction-design.org/literature/article/introduction-to-the-essential-ideation-techniques-which-are-the-heart-of-design-thinking>

**01/31** THE PINHOLE CAMERA: DESIGN AND FABRICATION

**WK5**

**02/05** THE PINHOLE CAMERA: DESIGN AND FABRICATION

**02/07** THE PHOTO LAB: THEORY AND PRACTICE

**WK6**

**02/12** PINHOLE CAMERA: SHOOTING / LAB PROCESSING

**02/14** PINHOLE CAMERA: SHOOTING / LAB PROCESSING

**WK7**

**02/19** PINHOLE CAMERAS + PHOTOS: GROUP CRIT / DISCUSSION

**02/21** A BRIEF HISTORY OF CINEMATOGRAPHY

SCREEN *Origins of the Motion Picture* (1955, 16mm film)  
*The Story of Film: An Odyssey. Episode 1: Birth of the Cinema.* (2012, on Kanopy)

**WK8**

**02/26** THE ZOETROPE: HISTORY AND THEORY

TBA: Field trip to Durham Pre-Cinema Devices Collection

**02/28** **NO CLASS.**  
MANDATORY ATTENDANCE at COSMIC RAYS FILM FESTIVAL  
SCREENING, MAR. 1 or 2.

**WK9**

**03/05** INTRO TO TINKERCAD

**03/07** 3D PRINTERS: THEORY AND PRACTICE

DEMO 3D PRINTER in BeAM SPACE

**WK10**

**03/12, 03/14** **SPRING BREAK**

**WK11**

**03/19** THE ZOETROPE: DESIGN PRESENTATION / IDEATION

Group project. Each student creates a beginning + end shape. Students vote on favorite 3 shapes. Each student then modifies the shapes, creating animated series.

**03/21** THE ZOETROPE: DESIGN AND FABRICATION

**WK12**

**03/26** THE ZOETROPE: DESIGN AND FABRICATION

**03/28** THE ZOETROPE: DESIGN AND FABRICATION

**WK13**

**04/02** THE ZOETROPE: DESIGN AND FABRICATION

**04/04** THE ZOETROPE: GROUP CRIT + DISCUSSION

**WK14**

**04/09** A BRIEF HISTORY OF THE FILM STRIP + FILM PROJECTOR

**04/11** LASER CUTTER: THEORY AND PRACTICE

DEMO LASER CUTTER in BeAM SPACE

**WK15**

**04/16** 16MM FILM STRIPS: DESIGN PRESENTATION / IDEATION

**04/18** 16MM FILM STRIPS: DESIGN AND FABRICATION

**WK16**

**04/23** 16MM FILM STRIPS: DESIGN AND FABRICATION

**04/25** **NO CLASS.**

ATTEND QEP RESEARCH AND MAKING EXPO: April 26, 3-5 PM in the Great Hall.

**FINAL EXAM: MAY 7, 8AM**

16MM FILM STRIPS: PUBLIC SCREENING/ INSTALLATION