UCLA Sci Art Lab + Studio

RUBRIC & COURSE INFORMATION

COURSE TITLE
Sci | Art Lab + Studio

COURSE UNITS
4 UC Credits
Pass / No Pass

COURSE NUMBER
DESMA 6
**FACULTY + STAFF**

**UCLA PROFESSORS (CURRICULUM / LECTURES):**
Dr. Victoria Vesna, Art|Sci Center, Department of Design Media Arts, Founder + Director
Dr. James Gimzewski, Department of Chemistry, Scientific Director

**INSTRUCTORS:**
Ivana Dama, Lead Instructor
Maryam Razi
Ivy Lovett
Gabriel Tolson

**TEACHING ASSISTANTS:**
Avery Collins-Byrd
Eliana Gelman
Katharine Niles
Subin Lee

**VISITING PROFESSORS:**
Dr Adam Stieg, CNSI Associate Director, SciArt Director Emeritus
Dr. Vuk Uskokovic, UC Irvine
Dr. Sam Lilak, UCLA
Dr. Santiago Torres, UCLA
David Roy, Yale University
Mick Lorusso, UCLA
Jeremy Kamal, Harvard University

**ADMIRISTRATION STAFF**
Rachel Youn

**TECHNICAL STAFF**
John Brumley

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**COURSE OVERVIEW**

Sci|Art Lab+Studio Summer Institute offers a cutting-edge, 4-credit lab/studio course to High School students on methodologies for applying the scientific method and creative processes as complementary tools for art, design and innovation.

Course material includes virtual lab visits, remote workshops facilitating hands-on experiments, and recorded lectures with world renowned artists and scientists. Through virtual engagement students will be exposed to the work of scientists and artists that explore new forms of creative expression, communication and collaboration within this multidisciplinary field.

To facilitate the application of our course material, students will develop an original concept for a collaborative final project under the challenge of ‘Imagine the Impossible’. Building off of course material and guided by the assistance and skill of the base SciArt Team, student groups will create and deliver a multimedia presentation to share their work and ideas during the program’s live streamed closing ceremony.
ASSESSMENT + GRADING CRITERIA

CLASS ATTENDANCE & PARTICIPATION
(TOTAL POINTS POSSIBLE: 20)

10 points for participation and 10 points for attendance

Students are required to attend and actively engage in class activities - synchronous and asynchronous. You must be present and listen to all of the lectures, workshops and films that work with your time zone. If too early or too late, you are required to watch the recorded sessions and blog about the topics covered so you don’t fall behind.

BLOGS
(TOTAL POINTS POSSIBLE: 20)

8 blogs are required to receive a full credit

Keeping with the goal of shifting traditional concepts of classwork and homework to facilitate more dynamic, peer-to-peer learning and discussion, students are required to complete seven blog assignments in response to the content introduced in lectures and workshops throughout the course.

In the written blog assignment students are asked to expand upon the ideas presented in the chosen lectures/workshops, and are expected to think critically about the content and take it further with their own research and connections.

Students are asked to specifically search for online resources and provide both links and images as part of this assignment.

Each morning, the Blogs of the Day are selected, highlighted and discussed during the lecture.

MIDTERM PROJECT
(TOTAL POINTS POSSIBLE: 30)

Students are required to complete at least four Workshops’ project assignments.

Students will create a folder on google drive for each project and submit it to their instructor for review.

After participating in required workshops, students should commit to complete at least four of the corresponding projects’ assignments.

FINAL PROJECT
(TOTAL POINTS POSSIBLE: 30)

Students will develop an original concept for a collaborative final project under the challenge of ‘Imagine the Impossible’.

Students will form collaborative groups based on interests and instructor facilitation.

With the guidance and the knowledge base of the Sci|Art Team individuals or groups of students will create and deliver a multimedia presentation of their final project during the closing ceremony.
LEARNING OBJECTIVES + COURSE GOALS

G1. Expose students to the works of scientists and artists that explore new forms of creative expression, communication, and collaboration within this multidisciplinary field.

G2. Highlight historical perspectives and modern trends at the interface of art, science and technology. G3. Introduce students to current scientific and artistic research.

G4. Promote the exploration of creative aspects of scientific research and innovation.

G5. Offer broad understanding of the impact of science on contemporary art and popular culture.

G6. Promote the development of proposals and ideas that could serve as prototypes for either art projects or scientific research study.

STUDENT LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to:

SLO1. Recognize the connections between cutting-edge scientific research, popular culture and contemporary art;

SLO2. Distinguish historical perspectives and modern trends at the interface of art, science and technology;

SLO3. Demonstrate a broad knowledge of the wide spectrum of scientific topics that directly influence culture at large;

SLO4. Differentiate the implications of theory and practice on the application of scientific and artistic concepts;

SLO5. Assess the implications of social, political and ethical contexts that influence scientific and technological innovation and paradigm shifts;

SLO6. Propose an original concept for a collaborative project under the challenge of 'Imagine the Impossible'.
A collection of daily lectures, delivered by a team of SciArt Instructors that serve to highlight historical perspectives and modern trends at the interface of art, science and technology.

In addition, a collection of special seminars given by leaders and visionaries in the fields of art and science supplement the course materials.

These lectures and subsequent discussions serve to stimulate an open discourse between the students and active participants in these fields in a comfortable, low-pressure setting.

In order to expand discussion, encourage student participation and foster learning, recorded lectures will be available on the course website the day after they are delivered.

The SciArt Lab+Studio team offers a series of hands-on workshops that introduce you to multidisciplinary topics through a short lecture and then a quick exercise.

Students are required to attend all lectures / workshops.

Students will choose four topics covered that they will expand on with longer projects that will be further developed for midterm and finals.

An undeniable connection between science, culture, imagination and creativity has undoubtedly manifested through science fiction writing and film.

To facilitate a conversation regarding the historical impacts of science fiction on both popular culture and ongoing trends in technology, a Sci-Fi Film Series is curated by the SciArt Team. Students are also encouraged to suggest movies they would like to share.
Course Schedule

DAY 01
ENVIRONMENT

09:00am-09:30am  Introductions
Directors, Instructors, TAs

09:30am-10:00am  Introduction to Art and Science | Dr. Jim Gimzewski
+ Dr. Victoria Vesna

10:00am-11:00am  ICEBREAKER - Get to know students

11:00am-12:00pm  Instructors go over blog assignment and rubric/curriculum

12:00pm-01:00pm  Lunch

01:00pm-04:00pm  OFFLINE ACTIVITIES

04:00pm-05:00pm  Mandatory Closing Check-in + Lab Hours
Course Schedule

**DAY 02  
NANO**

09:00am-09:30am  Blog Report  
Check-ins & attendance

09:30am-10:30am  Visualizing Carbon Lecture | Dr. Victoria Vesna

10:30am-11:30am  Visualizing Carbon Workshop | Dr. Victoria Vesna

11:30am-12:00pm  Review

12:00pm-01:00pm  Lunch

01:00pm-03:00pm  OFFLINE ASSIGNMENTS

03:00pm-04:00pm  Tools of Visualization | Dr. Adam Stieg

04:00pm-05:00pm  Mandatory Closing Check-in + Lab Hours

**DAY 03  
MICRO BIO**

09:00am-09:30am  Blog Report  
Check-ins & attendance

09:30am-11:00am  Nano Lecture | Dr. James Gimzewski

11:00am-12:00pm  Unveiling the Invisible | Outside Activity

12:00pm-01:00pm  Lunch

01:00pm-04:00pm  OFFLINE ASSIGNMENTS

04:00pm-05:00pm  Mandatory Closing Check-in + Lab Hours
# Course Schedule

## DAY 04  DATA

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>09:00am-09:30am</td>
<td>Blog Report - Check-ins &amp; attendance</td>
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<tr>
<td>09:30am-12:00pm</td>
<td>Sculpting With Digital Debris Workshop</td>
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<tr>
<td>12:00pm-01:00pm</td>
<td>Lunch</td>
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<td>01:00pm-03:00pm</td>
<td>OFFLINE ASSIGNMENTS</td>
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<tr>
<td>03:00pm-03:30pm</td>
<td>Mandatory Closing Check-in + Lab Hour</td>
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<tr>
<td>03:30pm-05:30pm</td>
<td>Screening Session</td>
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## DAY 05  SPACE

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>09:00am-09:30am</td>
<td>Blog Report - Check-ins &amp; attendance</td>
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<tr>
<td>09:30am-11:00am</td>
<td>Alien Star Dust Lecture + Meditation</td>
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<td>11:00am-12:00pm</td>
<td>Lunch</td>
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<td>12:00pm-04:00pm</td>
<td>OFFLINE ASSIGNMENTS</td>
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<tr>
<td>04:00pm-05:00pm</td>
<td>Mandatory Closing Check-in + Lab Hours</td>
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### Course Schedule

#### DAY 06

**VIBRATIONS**

- **09:00am-10:00am** Midterm Brainstorming (Review, Select Topic + Groups)
- **10:00am-11:30am** Music and Quantum Mechanics | Dr. James Gimzewski
- **11:30am-12:30pm** Lunch
- **12:30pm-02:00pm** Deep Listening Workshop | Ivana Dama
- **02:00pm-04:00pm** OFFLINE ASSIGNMENTS
- **04:00pm-05:00pm** Mandatory Closing Check-in + Lab Hours

#### DAY 07

**ECOLOGY & PLASTICS**

- **09:00am-09:30am** Blog Report
  Check-ins & attendance
- **09:30am-11:00am** Introduce Final Project
- **11:00am-12:30pm** OFFLINE ASSIGNMENTS
- **12:30pm-01:30pm** Lunch
- **01:30pm-03:00pm** Plasticine Lecture | Dr. Victoria Vesna
- **03:00pm-3:30pm** Mandatory Closing Check-in + Lab Hours
- **03:30pm-5:30pm** Screening Session
## Course Schedule

### DAY 08
**GENETICS + ANIMAL BODIES**

- **09:00am-09:30am**: Blog Report
  - Check-ins & attendance
- **09:30am-11:00am**: HOX Zodiac | Dr. Victoria Vesna and Siddharth Ramakrishnan
- **11:00am-12:30am**: Final Project Proposal
  - Students begin working with their teams, instructors and workshop leaders hop in and out of rooms to help students.
- **12:30pm-01:30pm**: Lunch
- **01:30pm-04:00pm**: OFFLINE ASSIGNMENTS
- **04:00pm-05:00pm**: Mandatory Closing Check-in + Lab Hours

### DAY 09
**COLLABORATION / COMMUNITY**

- **09:00am-09:30am**: Blog Report
  - Check-ins & attendance
- **09:30am-12:00am**: Work on Final Projects in Groups
- **12:00am-01:00pm**: Lunch
- **01:00pm-04:00pm**: OFFLINE ASSIGNMENTS
- **04:00pm-05:00pm**: Mandatory Closing Check-in + Lab Hours
## Day 10 - Final Presentation

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<tbody>
<tr>
<td>09:00am-10:00am</td>
<td>Group Prep for Lecture</td>
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<tr>
<td>10:00am-01:00pm</td>
<td>Final Presentation</td>
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