Interdisciplinary approach of the education in physics using arts?

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Istanbul Turkey
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Oldest art institution in Turkey

- 134 years ago as Sanayi-i Nefise Mektebi (Fine Arts School)
- 1928 Academy of Fine Arts
- 1964 State Academy of Fine Arts
- 1984 Mimar Sinan University
- 2004 Mimar Sinan Fine Arts University

Osman Hamdi Bey
Painter, archeolog, historian of art and founder of MSFAU
MİMAR SİNAN FINE ARTS UNIVERSITY

• is the guiding university of national art education politics and
• is the most popular fine arts institution among the students!

Every year approx. 2500 applicants register for the talent exams of whom only 200 of them are admitted

But it is *not only* a fine arts university
Academic Organization of MSFAU

Science and Letters Faculty
- Physics
- Mathematics
- Statistics
- Archeology
- History of Art
- Sociology
- History
- Turkish Language and Literature
- Philosophy
- Educational Sciences
- Western Languages and Literature
- Eastern Languages and Literature

Fine Arts Faculty
- Painting
- Sculpture
- Stage and Costume Design
- Photography
- Traditional Turkish Arts
- Ceramics and Glass Design
- Graphic Design
- Textile and Fashion Design
- Basic Art Education
- Cinema and TV
- Conservation and Restoration of Artworks

Architecture Faculty
- Architecture
- City and Regional Planning
- Industrial Design
- Interior Architecture

State Conservatory
- Music
- Musicology
- Performing Arts

Also, School of Conservation and Restoration of Moveable Cultural Properties and two vocational schools on Clothing Manufacturing Technologies and Architectural Restoration

more than 7000 undergraduate students and 2000 graduate students
more than 300 foreign students
700 academic staff
400 administrative staff
So it is also an university where art and science meets

One example is the sculpture inspired by the basic equations of quantum field theory, general relativity and string theory.

sculptures at MSFAU Physics Department. by Prof. N. Pala
Indeed art and physics are not so separate subjects !!!

what I learnt from my physics for arts class :
Different view of life but similar problems, similar education and even similar aesthetic concerns :)

An artist uses Physics in two main aspects!

I - Direct use of physics knowledge
like kinematics, optics, sound

II - Inspiration from physics concepts
like new movements in visual art
Some examples of direct use in visual art

Divisionism (also called chromoluminarism) was the characteristic style in Neo-Impressionist painting defined by the separation of colors into individual dots or patches which interacted optically.

The idea is similar to the colour generating at LCD monitors via pixels.
Some use of interference of light
(additional colours)

(structural color generating)

All are Olafur Eliasson’s works around 2010
Some inspirations from physics (specially theoretical physics)

Cubism (an early-20th-century avant-garde art movement)

Looking at an object from 4-dim Euclidean space

Futurism (also an early-20th-century movement)

Trying to introduce time to visual art! somehow 3+1dim Minkowski space

So futurism and cubism somehow related to each other via Wick rotation :)))
many of Dali’s works

The Persistence of Memory 1931

Disintegration of the Persistence of Memory’ (1954)

Hommage_à_Newton 1975

Galatea of the Spheres 1952
Victor Vasarely

“I cannot prevent myself from feeling a troubling analogy between my “visual kinetics” (plastique-cinétique) and the ensemble of the micro and macrocosm. Everything is there: Space, Time, Bodies, and Waves, the relations and the fields. My art transposes nature thus one more time, this moment right now, the one of pure physics that renders the world physically comprehensible.”

Pictures from Victor Vaserly exhibition at Tophane-i Amire Cultural Center of Mimar Sinan Fine Arts University, Feb-March 2017
some more contemporary examples

TOMÁS SARACENO - **ON SPACE TIME FOAM**
installation at Milano 2013

RYOJI IKEDA - **SUPERSYMMETRY**
work done during **ARTS @ CERN** programme 2014
“what we study in school is only a tiny part of math, much of it established more than a millennium ago.”


for physics the situation is the same
1) is it time to think about modernising the physics education?
2) does art help students and also society to understand physics?
3) how to do it?
Chaque science devient poésie après être devenue philosophie
- Novalis

Each science becomes poesy - after becoming philosophy

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