

## Arduino LilyPad in a context of new media art and open source



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The seminar has the following objectives:

- Communicate to students about the agreement between University of Pisa and the Norwegian University of Science and Technology and invite them to consider NTNU ([www.ntnu.no](http://www.ntnu.no)) as possible Erasmus destination
- Introduce the ArTe project at the intersection between new media art and open source software
- Look concretely at Arduino, an example of OSS hardware and software and a tool for creativity

Art is about communication, between authors and spectators, but also between spectators. While science primarily concerns itself with facts, art is primarily about feelings and emotions. Nevertheless, art and science have always been interdependent, as artists of all times have used state of the art scientific and technical knowledge to express their feelings through their artworks. Think of the mathematical knowledge that led to the discovery of perspective in the Renaissance, or the cultural revolution triggered by technological inventions like photography, cinema, television, the computer, and the Internet.

In project ArTe [www.artentnu.com](http://www.artentnu.com), we use the term “new media art” to describe artworks involving digital images, animations, digital music, computer games, digital poetry and literature, computer based installations, and robots.

Computers were originally invented as machines to make calculations. This is why they are called computers, from the Latin word “computare” which means “to calculate”. Early on, some pioneers recognized that computers can be exploited as machine to create and share culture, as well as calculate. By culture we mean cultural objects like books, music, video, games, as well as the software itself. In ArTe, we look at cultural objects from these two perspectives: the relationship between the author, the audience and the media format, and the

tools used to create. Openness and freedom are similar terms in this context. In ArTe we use both the term free and open.

By OSS (Open Source Software) we mean those computer programs which can be used freely and whose source code is available for modification. We have chosen eight contemporary tools which are open source and which allow the user to produce pictures, animations, sound files, digital stories, and interactive installations.

Arduino (<http://arduino.cc/>) introduces the concept of open source hardware. It is intended for artists, designers, hobbyists, and anyone else interested in creating interactive objects or environments. Arduino boards can be built by hand and all the instructions are available for free here or they can be purchased.

LilyPad Arduino!

The LilyPad Arduino (<http://web.media.mit.edu/~leah/LilyPad/>) is a set of sewable electronic components that let you build your own soft, interactive fashion. To get started, snag a LilyPad deluxe kit, which has all of the available LilyPad. The components are the LilyPad mainboard, FTDI board, power supply, a spool of conductive thread, sensor and actuator boards.

Jaccheri will bring a couple of examples of already made projects to be discussed with the students. Moreover she will bring a kit of LilyPad Arduino boards, sensors (light, temperature, acceleration) and actuators (led and buzzer) and will facilitate students who are willing to start small projects.