Aalto Math and Arts (minor)

Basic information of the minor

Code: ARTS3097
Extent: 18-27 ECTS
Language: English
Level: Bachelor, master and doctoral
Organizing department: Department of Art and Media / ARTS ja Department of Mathematics and Systems Analysis / SCI
Teacher in charge: Anniina Suominen
Administrative contact:
Target group: All Aalto students
Application process: No separate application procedure
Quotas and restrictions: No quotas or restrictions
Prerequisites: No prerequisites

Content and structure of the minor

The Aalto Math and Arts Minor is designed for students from all schools of Aalto in all levels of education. This systematic approach to engage mathematics and arts is open to students from the other universities in Finland as well. Especially art educators and students from teacher education are highly encouraged to take these courses. School teachers are also welcome to update their skills and find new concrete multidisciplinary ideas for their daily work. Courses can be taken independently, but either (or both) of the 5 ECTS courses below are recommended to be finished before MS-E1000. It is also possible to complete additional independent studies if needed. Contact Kirsi Peltonen in case you are interested in them.

Learning outcomes: Students will learn to find connections between mathematics and art and architecture. Real mathematics will be revealed through patterns, symmetries, structures, shapes and beauty in such a way that will enable the student to view our environment from a new perspective. By the end of the course, the students will be able to distinguish aspects from their own fields which can be presented, considered and developed using the language of modern mathematics.

During the course students will learn to understand some of the spatial constraints governing visual making, how they relate to each other, and what are the geometric and topological concepts used to refer to them. The students will learn how to represent structures and spaces in interesting and effective means. They will also learn to recognize and contextualize various geometric and topological phenomena, talk about them using appropriate vocabulary, solve spatial problems arising from their own practice, and know where to find further information about them. Dealing with the properties of polygons, meshes, solids and their projections, many contents of the course are perfect for application in digital technologies such as programming, CAD and 3D printing.

Courses and timing:

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Credits</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-C1001</td>
<td>Shapes in Action</td>
<td>5</td>
<td>period I, 2022-2023</td>
</tr>
<tr>
<td>MS-E1000</td>
<td>Crystal Flowers in Halls of Mirrors: Mathematics Meets Art and Architecture</td>
<td>5-15</td>
<td>periods III-V, 2022-2023</td>
</tr>
<tr>
<td>AXM-E0411</td>
<td>Spatial Structures</td>
<td>6</td>
<td>periods I-II, 2022-2023 and 2023-2024</td>
</tr>
</tbody>
</table>

(Check the minimum scope of the minor studies in your own program.)