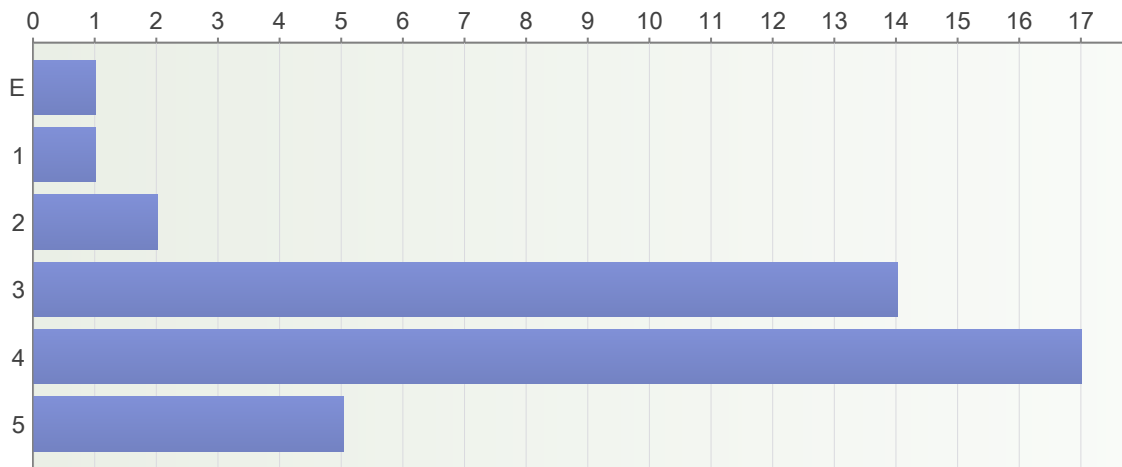


## MS-C1001 Shapes in Action (2018-09-11 - 2018-10-19)

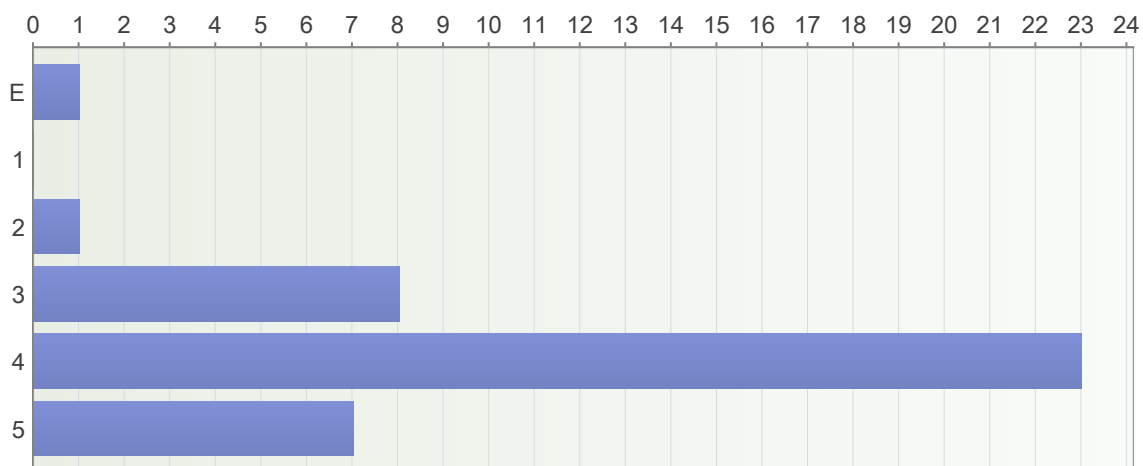
1. My overall assessment of the course E=Not applicable, 1=Fair, 2=Satisfactory, 3=Good, 4=Very good, 5=Excellent

Number of respondents: 40



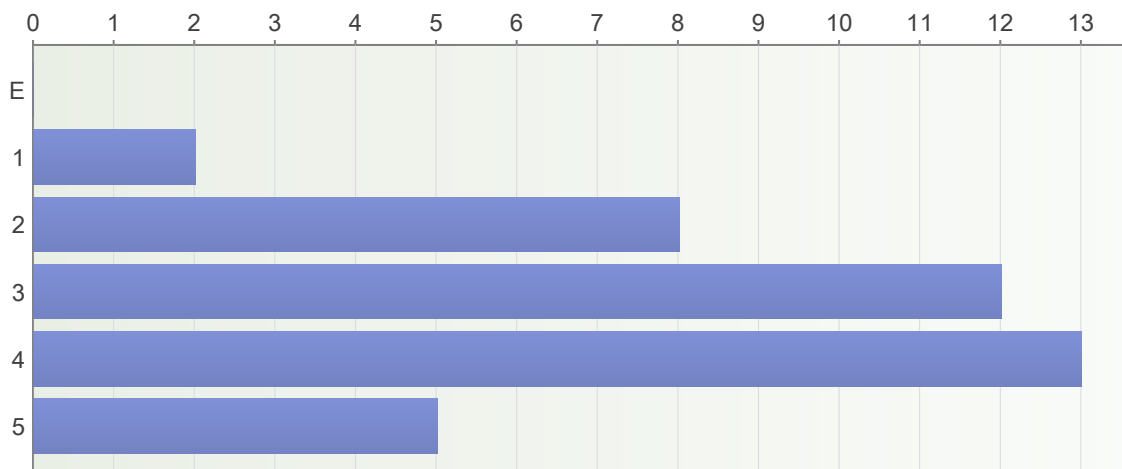
2. The teaching methods (lectures, labs, group work, online study, assignments etc.) supported my learning E=Not applicable, 1=Strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree

Number of respondents: 40



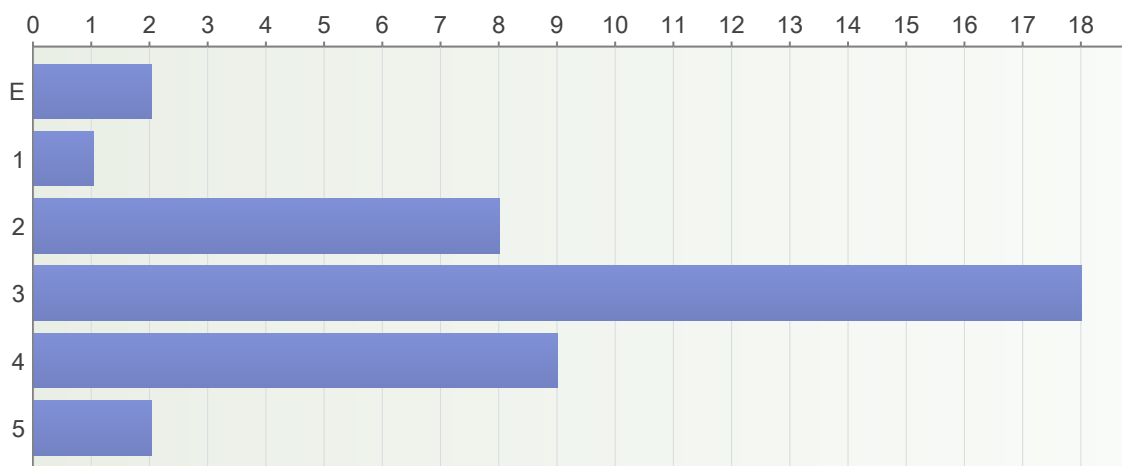
3. I am pleased with my study effort on this course E=Not applicable, 1=Strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree

Number of respondents: 40



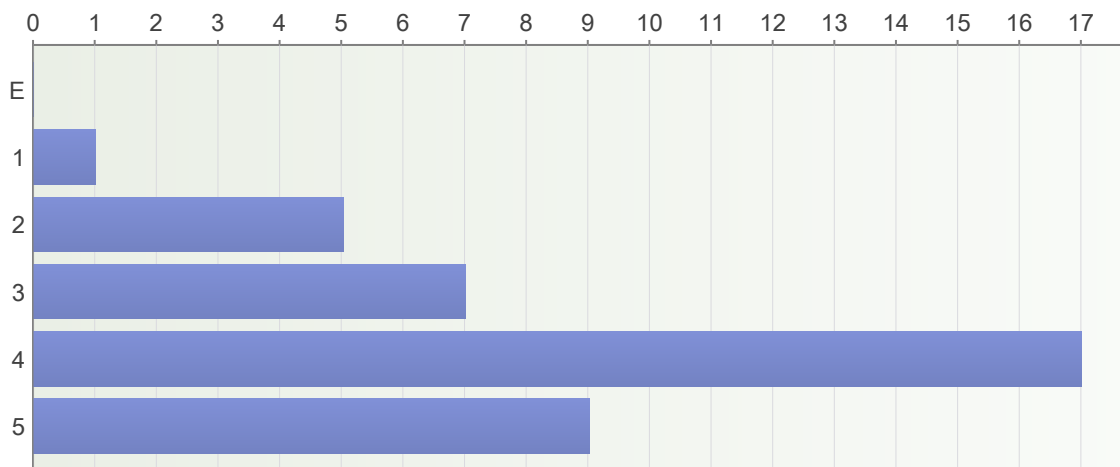
4. According to the guidelines, one credit (ECTS) requires 27 hours of student work. Compared with this, the completion of the course required E=Not applicable, 1=Considerably less time, 2=Slightly less time, 3=The right amount of time, 4=Slightly more time, 5=Considerably more time

Number of respondents: 40



5. I think I will benefit from the things learnt on the course. E=Not applicable, 1=Strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree

Number of respondents: 39



6. What was good about the course? Which factors in particular supported your learning?

Number of respondents: 33

- I enjoyed the various lecture and working with my group! :)
- Really chill lectures and I really liked the printing of the fabrics. The butterfly effect lecture was interesting.
- Hyvää oli uudet mielenkiintoiset näkökulmat, joita kurssilta sain.
- This course offered me some new perspectives to think about different patterns. The fact that we pysicaly did excersises with our own hand helped the amount I learned. Reflections from lectures were from time to time hard to write but they made me think of the lecture a little bit more. I liked that this course was a little bit different than normal engineering courses. Pattern printing was my favourite part of the course.
- Reflections and final project
- Some of the lectures were rather interesting and thought provoking, and overall the instructions given by the teacher were pretty easy to understand a lot of the time which definitely helped.
- The videos that were part of course material were really good for people who haven't studied mathematics. Also the practical things we did were really essential to learning.
- I liked the hands-on experiments. They really helped understand the concepts. Having different lecturers was refreshing as well.
- I loved the interdisciplinary approach and all the visualization tools and methods we used, both with computer and with our hands. The concept of this course is just great. It was shocking at the beginning, the lectures were long and full of informations, but the course was totally worth the effort.
- Practical learnings that were provided in the course are essential for students to understand and to follow the courses better. Lecturers were friendly and easy to be approached by students.
- The subjects were interesting in general, the contents didn't require toi much backround information.
- Enthusiastic lecturer. The printing workshop, folding paper excersises etc. were actually quite good in getting hands on and supporting understanding.
- Shape in Actions is overall interesting, since I've never taken a course quite like this. The subject is not unfamiliar but provided a new approach, as in symmetry exists in different type of objects and there is so much to study about it. What I like most about the course are the way illustration and figures pique my imagination and the lecturers' enthusiasm, they never hesitate to answer any questions and provide information.

- It was always useful when we did some kind of practical experiments, as they helped understanding how certain things worked. Doing things in group or with someone also supported my learning.
- Kankaanpainanta ja ryhmässä näiden analysointi oli todella hyvä osa kurssia.
- Very inspiring. Brought me to analyze and view artistic patterns from a new perspective.
- I really liked the concept of the course, the lectures were entertaining, I especially liked the idea of having guest lecturers presenting about their fields. The textile tutorials were really enjoyable and gave a good practical aspect to the course.
- I found the variety of topics to be very rich. I think the exercises facilitated learning the best.
- Hands-on exercises like the textile printing were great. The lectures were also good.
- Practical side.
- Group work, interesting lecturers
- I'm from SCI and I met a very interesting person from ARTS at the course that I have now worked with outside the course. The collaboration has been very fruitful. I would not have met this person otherwise, so thank you for helping us find each other! I wish more people would work with each other across school boundaries and I think multidisciplinary courses like this are perfect for that.

I also got inspiration for my own works from the symmetry groups.

- The lectures.
- The hands on workshops with printing. The building with paper, drawing, using the little building blocks. Animations, videos. The enthusiasm of the teacher. The learning diaries. The group works.
- Appreciating the intrinsic usefulness of geometric shapes in various planes or dimension.
- The course was refreshing. The topics were really interesting.
- I love the lecturers are always so active and enthusiastic and the way that they come up with some activities for students to practice their learning. This helps a lot in making students more excited about the lesson.
- I liked the workshops. Especially the pattern workshop, that gave another look on the symmetry notation and deepened our knowledge.
- Tykkäsin kangasworkshopista, siellä pääsi tekemään uutta ja tekeminen liittyi hyvin kurssilla käsiteltyyn asiaan.
- I had never really thought math from this perspective before so I thought this course broaden my view on how math can be applied and how it is seen in everyday situations. I thought the classes about Lorenz equation and Butterfly effect were the most interesting ones as they were the most related to my field of study.
- This course has given me a great introduction into symmetries and group theory. Even when the course material and emphasis are not theoretically heavy, they gave me plenty of questions to be discovered. The motivation I gained from this experience to continue my own studies was formidable.
- The group work was a good idea, as well as hands-on experience.
- The analysis skills, also the butterfly effect.

## 7. What needed improvement on the course? Which factors complicated your learning?

Number of respondents: 33

- The spaces could be better, I don't like the Monday's lecture's space a lot
- The basic idea for this course was good but the execution more or less failed. First of all, the English skills of the lecturer weren't that good meaning she definitely knew all the right terms to things etc BUT the pronunciation made it really difficult for me to follow the lectures. In addition, there was too much talk about the people behind every theorem. Also, there were lots of things that were introduced during a single lesson and thus nothing was talked really thoroughly and thus it easily made me not being able to follow the lessons. Some of the lessons had extremely boring subjects and some people was seen sleeping during them. One person even stated: "This is the most boring lesson out of all the boring lessons that we have had in this course".  
The only reason I would recommend this course to anyone would be because you get 5 credits with relatively little work compared to other math courses.
- Kurssin sisältö jäi osittain epäselväksi huonon kielitaitoni takia. Uskaltaisin myös väittää, että englannin kielellä opettaminen vei osan luennoitsijoiden potentiaalista.

- Different lecturers are a good thought but they tend to be so into their own knowledge that it is hard to follow them. The second half of the course seemed very separate from the first part as I could not connect for example the chaos and the projective geometry to the subject of symmetries and patterns we first learned. Maybe you should have clearly said that we are now moving to a new subject and how these two subjects connect to one another if they even do.  
The pattern printing should maybe be done twice during the course: right in the beginning and right in the end. This would be very nice to see how the thinking process of patterns have developed during the course.
- 
- As a data science student it wasn't very clear why any of the things we were learning were really important to me at all, and frankly it wasn't a topic that I would otherwise be interested in learning about. Beyond that, I think some of the ideas especially early on were somewhat vaguely explained to me as a student with no prior experience in artsy stuff.
- The dias could be more demonstrative and the terms that we use could be collected together in some mycourses page. Also the teachers could try to improve their pronunciation so that their English could be understood easier and the main message would be transmitted better.
- There could have been more hands-on experiments. I thought they worked really well on this course and I wish there were more of those. The lectures felt a bit too long - I think they could have been cut a bit shorter or there could have been some activities instead. In addition, I wanted to know about the grading because I had no idea if what I did was good enough to get a good grade or not.
- It would be nice to have some kind of reference (links, books, names or projects we can search for online... ) in the last slide of each lecture, so that we can read or see more if we are interested or curious or we have some free time. I'm not saying there is the need for mandatory reading material, but some kind of extra resources can be useful for the final project or for some personal project, for example.
- The topics are so wide that it is a bit hard to follow sometimes, but they were all interesting that I am afraid if the lecture reduces the topics it would be less informative.
- The first part of the course concentrated heavily on patterns and the magic theorem while other topics were discussed only rather hurriedly. I found it inconsistent. The week with Augusto was too separate from the other topics. Kirsi would have been able to explain things more clearly, had she been able to speak Finnish.
- At times it was challenging to see where we are going (the relation of the big picture vs. the detail matter discussed in the lecture at a point in time). Maybe some slides relating to more than two dimensional concepts could be supported with videos already in the lecture/slides (the homework videos were very helpful here).
- One of the things I found difficult is that I sometimes cannot grab the idea right away. As this course combined mathematics and arts, it requires the learners to have a bit of imagination, and it is hard for me to see all the notion I am provided with. Also one little thing is that 2 lectures of 3 hours a week is a bit too much, but since there's a lot to cover, it is understandable.
- Sometimes it was difficult to follow what was going on and if you missed some part it may take a bit of time to get back on track. Writing reflections from every lecture was useful in a way as it reminded me what I had learned, but towards the end they started to feel a bit repetitive. Writing reflections once per week could've been better for me.
- En niin tykännyt kaikkista vierailevien professorien luennoista. Mielestäni me olivat osittain hieman hämmentävä lisä kurssiin.
- The group work was kind of forced, because none of us knew each other or studied the same things.

Also compulsory attendance at this point in our studies is somewhat annoying.

- Quite well organized, thank you!
- I think the material was not the easiest to follow. I do not mean by that that the lectures were hard to follow, it is just I do not have a complete picture in my head, how each topic relates to each other. Also I found the Kleinian groups hard to picture and understand, but that probably is only my experience
- I found the lectures a bit difficult to follow. The concepts were maybe too many and the explanations for each were not that thorough. Perhaps spending more time explaining the concepts in the future would help student understanding.

- There could have been more exercises during the lectures. As the lectures were long at three hours, doing something else than passively listening would help concentrate. The lectures themselves could have been more clearly structured.
- The course flow and lack of connections between topics.
- I had to drop the course after a few lectures due to personal reasons, so that was quite complicating for my learning... :)

In my opinion the first lecture should have focused only on inspiration/motivation, like in the Computer Graphics course.

I really enjoyed the pattern painting, there could have been more doing and less slideshow overall. I felt like this was quite math-first course.

I wish there was more ARTS students, what ever it would require for them to be able to take this course.

- All assignments in general. They were mostly tedious.
- I wish there were more animations to explain the mathematical concepts. So it would be easier to see what part of the complicated patterns should be looked at.
- I certainly would say the scope should have been reduced. Instead of introducing something new we could concentrate on getting the students understand what has been said. Honestly, we the students aid this except most feel they will not be given the chance. Meaning often times, the lecturer, as well as the students are at a loss on this.
- Some things were presented too theoretically.
- Personally, I feel that some of the contents are out of my reach especially working with shapes in another dimension. I do not have enough exposure to such dimension that I cannot digest well knowledge in some lecture
- It would be nice to have a clearer picture on what will be studied during the course and what weighs in grading. Currently I have no idea how many points I get from things and how many lectures one can skip to still get through the course.
- Kurssilta puuttui punainen lanka, joten yksittäiset aiheet tuntuivat tosi irtonaisilta toisistaan. Lisäksi monet kurssin asiat olivat liian yksinkertaisia matikan pääainekurssiksi.
- I thought the course was over well structured. However, due to the timing the long lectures on Tuesday made paying attention a little hard at times. Rather than having a long break I would have preferred an intense two hour lecture rather than a looser three hour lecture.
- Sometimes the Tuesdays lecture can feel quite long and mostly theoretical based. Albeit my interest in the topic, I find it quite challenging to keep a consistent focus at times. Due to work schedule, I was not able to attend the last 2 weeks' lectures of this course.
- The lectures might were too long -- even with a short break inbetween it was difficult to stay focused for a whole time.
- I think the course is already good.