

Preliminary Course Pisa

Short description:

The course started in March 2012 and the main part of the Course finished end of May 2012. Totally we had 4 hours per week = 40 hours totally with a group of 10-12 future teachers. They prepared different projects. The projects have been discussed and evaluated during the course and a program to visit High schools in the domain around Pisa was prepared.

We plan to visit 4 or 5 High Schools and in each of the Schools the future teachers present 2 projects, each project needs 1 hour for presentation and 1 hour for discussion with the High School teachers in Math and their motivated students. Target groups are groups of around 25-30 teachers in math and motivated students. Some of the visits are realized already and the feedback remarks are listed below.

Starting point: the choice of the Program

The participants have chosen several topics closely connected with the idea of their final project.

- a) Didactic games Nitra (SK)
- b) Modelling of the fly Vienna (AT)
- c) Number theory and games
- d) Napoleon problem
- e) Billiards

Projects that future teacher have chosen to develop

1. Mathematics and TV quiz

This project was prepared by the student Valeria Di Matei
The starting point is a real situation – a game on tv. Required basis: some initial notion of probability.

The project is connected with the following didactic material from our book:

Simulation of χ^2 – distribution John Andersen Aarhus

and

The teaching by the method of didactic games in primary school Uhrinová Eva, Mesaroš Miroslav, Nitra

The idea to use Excell to simulate probability relations is relatively not simple to be applied for the everyday work of the teachers. However, project was highly required by High School teachers and the discussion during the representation of the project in High School in Luca showed that

- a) this project was extremely high evaluated by students and teachers and even was very useful in the preparation of the final written exam, where probability problems have been included
- b) the students and teachers participating the presentation of the project have been able to pose questions, even to make a conjecture connected with the use of conditional probability
- c) However the Excell part needs some further development in the practical realization

2) Flight models

Author: Mattia Cordova

Base Jumping

Fly, fly away ... and bring back data Andreas Ulovec, Vienna

Feedback: quite interesting approach, the use of google earth works very well

3. Number theory and games

Feedback: Diophantine equation seems to be difficult for high school students, very attractive problem, to improve – the quality of pictures

4. Napoleon problem

**Feedback remarks: Discussion was very active, students and teachers posed interesting questions:
What will happen with Napoleon construction if we have polygons,**

5. Billiards

**Feedback: some of calculations have to be improved,
perimeter of periodic triangles is very difficult, some of the
tools has to be explained in better way**