# EXPERIENCE WITH TEACHING COURSE
# OF "FUN MATHEMATICS"

## Alena Prídavková

*Department of Mathematical Education, Faculty of Education*
*University of Prešov, Ul. 17. novembra 1, 081 16 Prešov, Slovak Republic*
*e-mail:* pridav@unipo.sk

**Abstract.** The programs of study offered by the Faculty of Education of the University of Prešov contain in its undergraduate level also courses under the category of Recommended Optional Courses. The author in the paper presents her experience with teaching Fun Mathematics. The content of the course is adjusted for the Moodle software environment to be utilised in e-learning.

## 1. Introduction

One of the aims of mathematical training of undergraduate students of the Faculty of Education of The University of Prešov is in developing their positive attitude towards mathematics. It seems urgent due to the fact that in academic year 2005/2006 only 25% of freshmen students in the Faculty of Education came from grammar schools (B. Tomková [4]). Moreover, most of them have rather negative attitude to the discipline.

When designing the contents of mathematical courses our colleagues at the department strived to respect the profile of a prospective graduate - holder of Bachelor degree in one of the following Programs of Study:

*Preschool and Elementary Education*;
*Preschool and Elementary Education of Socially Disadvantaged Groups (Teacher's Assistant)*;
*Preschool and Elementary Education of Psycho-Socially Disabled*;
*Education of Mentally Handicapped.*
Graduate of the above programs of study can be employed as:

- Educator in pre-school facilities,
- Educator in school clubs and leisure time centres,

- Teacher's assistant,
- Educator in special education facilities.

Characteristics of the mathematical courses listed in particular programs of study are given by Scholtzová [3].

## 2. The Course of "Fun Mathematics"

A course titled *Fun Mathematics* is listed under the block of recommended optional courses in all of four undergraduate programs of study. The course is offered in the second year of study in both summer and winter semester. Its goals include mastering the mathematical tasks which belong to the so called recreational mathematics within the scope of primary education practised especially during out-of school activities. The course follows the pattern of dividing contents into the themes. The content is thus composed of eleven thematic areas:

  [1] Mathematical Games.
  [2] Algebragrams.
  [3] Puzzles. Cryptography.
  [4] Mathematical Crossword. Painted Crosswords.
  [5] Tasks in Grid.
  [6] One-Line Drawings.
  [7] Puzzles with Matches (Sticks).
  [8] Tangram. Pentamino
  [9] Magic Squares. Sudoku.
[10] Maze. Labyrinth
[11] Mathematical Competitions.

The structure of contents varies in particular themes. Each chapter usually starts with an introductory text in order to give student an overview of the problem area. It is followed by the characteristic features of particular types of activities; some of them are complemented by notes concerning history of developing the given tasks. Substantial part of each theme (chapter) is completed by references to relevant literature or other sources in the form of links to www pages which can provide students with task samples. Students thus are able to work independently in selecting and solving tasks of recreational mathematics up to their aptitude. The course structure designed in Moodle environment enables students treat individual themes independently, satisfying their interests and needs. This way a room for individualised time

management of studying is opened - either through retrieving information from web pages or studying relevant literature.

Elaboration of seminar work on any of the above themes is a requirement for successful completion of the course. The seminar assignment should contain the collection of suggestions for task that could be used in extracurricular activities with elementary stage pupils.

The course of *Fun Mathematics* was taught for the first time in academic year 2006/2007. 15 full-time students and 44 part-time students enrolled for it in winter semester while the number of students enrolled in summer semester increased at 29 and 58 respectively.

Students' feedback regarding both the contents of the course and its modification for Moodle environment was positive in most cases. For illustration we present some of responses indicated in students' written reflection on the taught course.

- *I think the course is meaningful as we have obtained adequate inspiration for practice.*

- *I personally liked the course very much. The themes in Moodle are well presented enabling quick access to necessary information. I enjoyed the lessons much, got acquainted with many new fun tasks while learning mathematics from yet another side. I learned how to solve many tasks which seemed troublesome for me in the past.*

- *I learned about new logic games and puzzles which can be presented to children. Mathematics is not only about solving assignments but also a game.*

- *Recreational and fun course - something I did not expect a Mathematic can be.*

- *I would recommend this course to everybody.*

- *I think that the course fulfilled the expectation of "fun" mathematics since it was not about academic but really enjoying and fun mathematics. The Moodle environment is well arranged enabling everyone to find what is sought for. I assured myself that mathematics is no only boring calculations.*

- *I met with tasks which I had not been able to solve, yet thanks to the course I learned something new. The themes were aptly transformed to Moodle.*

## 3. Conclusion

Presented views prove that the course of *Fun Mathematics* has partially contributed to an increase in undergraduate students' interest in mathematics. It has been shown that "for the purpose of mathematical training of prospective elementarist it is appropriate to combine traditional forms with electronic courses accessible through the net" (M. Mokriš [1]).
uggested themes which are accessible in the electronic format can, apart from university study, also be utilised in working with pupils after lessons in school club or mathematical circle or leisure time centre. Some of the themes taught in the course are accessible on the web page designed to addresses the issues of mathematical education in primary stage of education [6]. There are also suggestions for methods of working with gifted children in mathematical circles.

## References

[1] M. Mokriš. Electronic textbook in LMS Moodle. Scientific Issues of Jan Długosz University of Częstochowa, Mathematics XII, 351–356, 2007.

[2] M. Mokriš, A. Prídavková, I. Scholtzová. Systém Moodle ako prostriedok na manažovanie vzdelávacích aktivít študenta. IKT vo vyučovaní matematiky 2. Monografia. Nitra, FPV UKF v Nitre, 84 - 89. 2007.

[3] I. Scholtzová. Filozofická a obsahová transformácia matematického vzdelávania v študijnom odbore Predškolská a elementárna pedagogika. História, súčasnosť a perspektívy učiteľského vzdelávania. Banská Bystrica, Pedagogická fakulta UMB, 161-165. 2005.

[4] B. Tomková. Induktívna cesta v matematike.Vyučování matematice z pohledu kompetencí žáka a učitele 1. stupně základního vzdělávání. Plzeň, Západočeská univerzita, 176-180, 2007.

[5] http://opal.unipo.sk/pf/moodle/course/view.php?id=202

[6] http://www.matematickapointa.sk