

OCCUPY UNIVERSITY--COURSE PROPOSAL

Course Title: **Radically Creative Algebra**

Organizer: Bronislaw Czarnocha

Frequency: Weekly

Start Date: May 1

Length: 1 month-5 weeks

Location: Organizer's apartment; apartments of participants. Large blackboard is a must

The course Radically Creative Algebra explores the possibility of creative thinking in elementary algebra – the subject which had been declared “not cool” by contemporary youth as well as by the society at large. At present, algebra is the main gatekeeper of the college gates: over 75% of high school graduate who enter CUNY colleges have to take remedial arithmetic and algebra in college and only 50% of those gets through.

Fear, dislike, trembling, mind freezing are the common states of mathematics students. The aim of the course is to explore the possibility of transforming that fear of mathematics into mathematical creativity through carefully chosen topics whose structure conforms to the general creativity conditions discovered by Arthur Koestler in his Act of Creation: the simultaneous presence of two different frameworks of thought and action. Thus the proposed course is the teaching experiment with the teaching-research question: How to transform fear of mathematics into mathematical creativity?

The political dimensions of negativity surrounding mathematics is not difficult to grasp. By creating the barrier of fear towards mathematics, generations of 99% after generations are separated, on the individual level, from their naturally given mathematical talent and aptitude, and hence from reaching the maximum of their potential; on the social level – from gaining the access to the lucrative technological mathematically-based job market.

Draft Schedule:

Meeting 1: Study of excerpts from the Act of Creation by Arthur Koestler, who have formulated general conditions for the creative act in any intellectual/artistic domain: the simultaneous presence of at least two different frameworks of thought and action. The discussion of conditions for creativity will be further explored through the mathematics of fairy tales.

Meeting 2: Continuing study of mathematics of fairy tales through the analysis of several chosen tales from different fairy tale collections such as Persian Classical Fairy tales, Grimm’s fairy tales, Russian, Hungarian, Indian and Andrew Lang fairy tales collection. Developing of the mathematical theory for fairy tales.

Meeting 3: Algebra as the generalization of the numerical patterns – building infinite sequences of numbers and investigating their limits.

The aim of the class is to experience and to appreciate the process of generalization – a basic mathematical activity open to everyone. The capacity to generalize that is finding general ideas behind their particular representation can be of profound use to the Occupy movement in its continuous process of self-definition.

Meeting 4 Digging into fractions.

Fraction is the first mathematical topic known to cause cognitive and affective difficulties in the elementary grades and their understanding and appreciation is missing in the communities at large.

The meeting will focus on understanding and beauty of fractions through the exploration of the number line. Number line is a composition of two different, fascinating mathematical ideas: that of a number and that of a continuous geometrical line. The affective aim of the meeting is to eliminate fear through its transformation into mathematical creativity.

Meeting 5. Summary, course assessment and redesign