

**Plymouth State University**  
**Department of Mathematics**

*Spring 2012*      *MG 5810 – Seminar in Mathematics Education*  
Instructional Leadership in School Mathematics

**Instructor:** Dr. Natalya Vinogradova      nvinogradova@plymouth.edu

**Room:** Hyde 318

**Dates:** March 10<sup>th</sup>, March 24<sup>th</sup>, April 7<sup>th</sup>, April 28<sup>th</sup>      **Time:** 10:00am – 4:00pm  
March 23<sup>rd</sup> – NHTM conference

**Credits:** 3 graduate credits (at the discounted rate of \$165.00 per credit, and \$25.00 registration fee.)

***Course Description:***

This course is focused on innovative methods of teaching K – 12 mathematics. Participants will analyze various instructional strategies with the following objectives:

- To enrich their own methods/approaches.
- To prepare to lead a discussion concerning creative ways of teaching mathematics with their colleagues in their schools.

During this course, participants will acquire a 'tool kit' of games and activities that can help students develop their understanding of mathematical concepts. Possible ways of using games and activities in the role of an alternative assessment will be discussed. Participants will learn how to create their own games and adjust existing games and activities in order to better fit a particular group of learners. Topics of the course are aligned with the NCTM content standards: *Number and Operations, Algebra, Measurement, Geometry, Data Analysis and Probability*. The methods and approaches discussed in this course will be appropriate for a wide range of students, both in grade levels and in mathematical ability.

***Requirements:***

It is expected that one will attend the entire duration of all sessions and will actively participate in all activities. There is no textbook for the course. Materials, provided in class, will involve various approaches that can be used for a wide range of students (meaning grade levels and math skills). Assignments will be given every class and will be due the next class meeting. The course will be graded by participation, out of class work, and the final presentation. An additional requirement for this course is participation in the annual NHTM conference on March 23<sup>rd</sup> at PSU in Plymouth.

***Final Presentation:***

The presentation will consist of an oral part and a written part. The oral part should take approximately 15 minutes, and the written part should be approximately 5 pages. The final presentation should be a demonstration of an innovative strategy that you used with your own students. During the final session, you will present to the whole class, giving out a short description to every participant of the class. The complete written report on your presentation is due on May 5<sup>th</sup> and can be submitted via e-mail, regular mail, or in person.

Your written report should:

- explain why and how this particular strategy was created/chosen: give references for your sources and describe how and why you altered the original approach;
- describe students for whom it is intended;
- discuss what you think this approach may help your students achieve;
- reflect on your final presentation in class: did everything go as planned? would you do anything differently?