Guided Discovery and Online Mathematics Education

Syllabus

(For online BSME participants)

Instructors

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Course Schedule

The course will meet online 2 x 90 minutes weekly for 14 weeks, for approximately 40 contact hours per semester (1 contact hour equals 60 minutes).

Many American institutions have a global/world cultures requirement, in which students must study and reflect on a cultural experience that is outside of the United States. The Guided Discovery and Online Mathematics Education course would fit well in satisfying such a requirement, as through investigating how mathematics is learned and taught in Hungary, the course involves first-hand experience and discussion about various aspects of Hungarian society.

Course Objectives

The main aim of the course is to learn about Hungarian style guided discovery and suitable online tools to support that pedagogical model. We will discuss the history and traditions of Hungarian mathematics education, gain first hand experience on guided discovery both from a student and a teacher perspective, and examine related instructional practices. We will also discuss and share experiences about online tools and methods that support guided discovery.

Activities will include:

- Read about Hungarian mathematics teaching traditions and gifted programs.
- Discuss guided discovery principles.
- Gain experience on solving problem threads, and using games and manipulatives as educational tools.
- Observe Hungarian K-12 classrooms through recordings.
- Discuss methodological questions, exchange ideas and views.
- Learn and share experiences about online educational tools and methods.

- **Online activity design:** you will plan and instruct short online activities for your fellow BSME students.
- **Micro-teaching**: you will design an online mathematics lesson for a classroom, in which your peers will play the role of students. You will be asked to design complex activities using various platforms and methods, with an emphasis on guided discovery.

Course Requirements

- **Participation:** Your active participation is required in all components of the course. (30%)
- **HW assignments:** You will work on weekly homework assignments. (20%)
- **Online activity design:** Described above. (20%)
- **Micro-teaching:** Described above. (30%)