

HONR 1310
♣ ♦ Math, Magic, Puzzles, & Games ♥ ♠

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Homepage: <https://web.northeastern.edu/seigen/MathMagic.html>

Text A: Lecture notes and reference material will be available through blackboard. The homepage for the course has additional material on a wide range of topics. You should browse through it and see what interests you. There are also some classical books on magic on reserve at the library.

Text B: *Magical Mathematics: The Mathematical Ideas That Animate Great Magic Tricks*, Persi Diaconis & Ron Graham, Princeton University Text, 2011, ISBN 9780691151649

Description: This is a **Service-Learning, Honors** Course. The course will go into depth on the mathematics behind some classic magic tricks, puzzles and games. Mathematical topics may include, but are not limited to, Combinatorics, graph theory, group theory, number theory, topology, dynamics, binary arithmetic and coding theory.

Service Learning: Students will be organized into teams of 4-5 students (though sizes and number of groups will vary depending upon the number of students and the number of Service-Learning partners). Each group will prepare 3 presentations - tentatively one on magic tricks, one on puzzles, and one on games.

Each presentation should be prepared in detail and practiced in class before meeting with service partners. This includes preparing handouts, activities and possible supplemental material for the teachers involved.

Students are expected to help critique each other and may "borrow" material from other groups. To this end, the groups will not prepare their presentations in the same order. Credit is given if you can improve your material for the next group to use.

Grading:

- 80% - 3 Presentations (25%, 25%, 30% - weights can vary but it is expected students will improve with each experience.) Each presentation will be evaluated for the following.
 - Class participation and Communications skills.
 - Mathematical sophistication and understanding.
 - Appropriateness of mathematical level for target audience.
 - Written (or other produced) materials related to the presentations.
 - Service Learning and Critical Reflection Report.
- 10% - Service Learning Partners evaluations
- 10% - Final presentation poster at the Service Learning Expo (Date <TBA>)