

Math 391 Recreational Mathematics & Magic¹ Fall 2020

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Office Hours: To be announced and by appointment
<http://www.math.uky.edu/~readdy/391>
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Lectures: MWF noon via Zoom

Texts: Persi Diaconis and Ron Graham, *Magical Mathematics: The Mathematical ideas that animate great magic tricks*, Princeton University Press.

Martin Gardner, *Mathematics: Magic and Mystery*, Dover.

Prerequisites: Math 213 Calculus III
Math 261 Number Theory or Math 214 Differential Equations
Math 322 Matrix Algebra

And one of:
Math 321 Intro Num Methods
Math 351 Topology I
Math 361 Modern Algebra I
Math 471 Advanced Calculus

Course	This course will focus on mathematical ideas behind recreational mathematics and
Material:	magic tricks, including combinatorics, graph theory, knot theory, number theory, group theory, topology and coding theory. The course will also stress mathematical writing for both general and specialized audiences, as well mathematical communication to an audience.

Magic Materials:

♦ ♠ ♥ ♣ One (1) deck of cards. Available at Kroger, Meijers, your favorite Dollar store...

Magic rope. Pick your favorite color (green, blue, red, ...). Available at magic stores. You can also substitute **cotton** clothesline.

Grading: Class Participation 15%
Quizzes 15%
Weekly/Biweekly Writing Samples 50%
Class Final Magic Show 20%

In lieu of a Final Exam, we will have a Class Final Magic Show the last week of classes, formerly known as Dead Week and now known as Magic Week.

¹Boring title: Math Composition and Communication

Class Participation:	You are expected to attend every live Zoom class and be engaged during class – by being prepared for class (reading, bringing magic cards, etc.), asking questions, answering questions, giving constructive advice, teaching the class a new magic trick, etc. You are allowed two unexcused absences with no penalty. Each additional unexcused absence will result in losing 1/5 of your Class Participation grade.
Quizzes:	A short quiz will be given during the last fifteen minutes of each Friday lecture. This will cover material from the previous week's Monday, Wednesday and Friday lectures. The lowest two quiz grades will be dropped. If you miss a quiz due to an absence (excused or not), this will be one of the two quiz grades which will be dropped.
Weekly Writing Samples:	Each week you will be given something to write about. It will usually be due on Monday at the start of class.
Final Class Magic Show:	The class will put on a magic show. More details to follow.
Absences:	Faculty Senate Rule 5.2.4.2 defines acceptable reasons for excused absences to be: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit “reasonable cause for nonattendance” by the professor. As required by University rules, you must present full documentation in order to request makeup work for a valid absence. Senate Rule 5.2.4.2 states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to University-related trips or a major religious holiday is required no later than 7 days prior to the absence. Per University policy, if you miss one-fifth or more of the scheduled lectures due to <i>excused</i> absences, the instructor will request that you withdraw from the course.
Cheating:	Don't do it. It is an extremely serious offense. As a minimum response, I will give a zero to the offender. Unless otherwise announced, during quizzes students will be required to have their camera on so that the instructor can monitor and answer any student questions via the chat function of Zoom.
Devices:	No digital devices (cellphones, computers, calculators, etc), books, notes or outside assistance of any kind including online software/calculator/assistance tools, are allowed during quizzes. By University policy the use of such constitutes cheating.

Plagiarism:	Plagiarism includes copying from outside sources, including internet sources. If charged, at minimum you will receive a zero. Maximum penalties include being suspended, dismissed or expelled from the University. For further information, consult the Faculty Senate rules.
Classroom Decorum:	Code of Student Conduct (AR 4.10), Section V, Letter J, Instructional Setting Behavior: <i>“Students who engage in conduct that results in disruption of an instructional setting may be directed by the instructor to leave the class for the remainder of the instructional setting period.”</i> Examples include but are not limited to reading email during class, texting, taking phone calls, updating your facebook page, using a fidget spinner, reading the newspaper, interrupting classmates and speaking aloud without being called upon. An attitude of respect for and civility towards other students in the class and the instructor is expected at all times. If what you are doing would be inappropriate behavior on a job interview, then it is very likely inappropriate behavior in the classroom.
Intellectual Property	All course content, including, but not limited to handouts, assignments, live and recorded lectures, lecture notes, syllabus, review materials, quizzes, exams, and webpages, is the intellectual property of the instructor. The instructor is the exclusive owner of all course materials. Course content cannot be reproduced in any medium or sold without prior permission from the instructor. Course meetings and lectures may be recorded by the instructor. All video and audio recordings of lecturers and class meetings, provided by the instructor, are for educational use by students in this class only. They are not to be copied, shared, uploaded to other online environments or redistributed in any manner.
Photography & Recording by Students	Video and/or audio recordings are not permitted unless a student has received prior permission from the instructor. Recording of other students by student(s) is prohibited per the UK Code of Student Conduct. Any distribution of recordings is also prohibited. Students with specific recording accommodations approved by the Disability Resource Center should present their official documentation to the instructor. Any violation of the class photography & recording policies will result in your final course grade being reduced by one letter grade as a minimum penalty.
Students with Disabilities:	Students with disabilities should provide your instructor with a Letter of Accommodation from the Disability Resource Center. The DRC can be reached via phone (859-257-2754) or email (drc@uky.edu).

The instructor reserves the right to modify this syllabus at any time.

Last updated August 16, 2020.