MA 391 Mathematics: Composition and Communication – Fall 2016

Syllabus

Instructor: Francis Chung
Office: 727 Patterson Office Tower
Office Hours: Tues 10-11, Mon 4:30-5:30, or by appointment.
   Also available via Canvas Discussion board.
Email: fj.chung@uky.edu
Class Meetings: MW 3-4:15, CB 335.

Course Structure and Goals. This is a composition and communications course: its main goal is to enhance your oral and written communications skills in a mathematical context. But this is also a mathematics course without any fixed content goals, and we will take full advantage of that freedom to give you the opportunity to *explore* some mathematics – to pose and answer your own questions.

   The idea of this course will be to study a small handful of simple mathematical problems, and see how they develop into richer and more interesting forms. As we go we will explore several forms of communication – the informal communication among people coming to grips with a problem, the effective presentation of proofs and solved problems, and the explanations of advanced mathematics to a general audience. The main goals of the course are to improve your communications skills in these three areas, as well as to give you the experience of mathematical exploration.

Note on Course Discussions. Since class discussion is an important part of this course, it is important to keep in mind that students are required to treat each other with respect and dignity at all times. This means, in particular, that other students' contributions and questions should be treated with respect. Disparaging or dismissive comments will not be tolerated. Moreover, students should be careful not to be disparaging or dismissive of themselves or their own mathematical abilities. The article "The secret to raising smart kids", by Carol Dweck, in the January 2015 edition of Scientific American, was required reading for a previous version of the course and is relevant to this point. The article is available online at
   http://www.scientificamerican.com/article/the-secret-to-raising-smart-kids1/

Course Texts. Some of the course will involve readings from Roots to Research, by Judith Sally and Paul Sally, but we will not use this text until well into September. Additional reading material will also be assigned from online and other readily available sources.

Assessment and Grading. Assessment will be based on five elements: class participation, regular writing assignments, a presentation, a midterm paper, and a final paper. The writing assignments, presentation, and papers will be graded on clarity and style as well as on mathematical content.

Participation: 20%

- Much of this class is centered around discussion in regular class times, so you are expected to be present and engaged in class.
- Up to 2 unexcused absences are permitted without affecting the participation grade. Further unexcused absences will cost 10% of the participation grade for each such absence. Excused absences will be governed by University Senate Rule 5.2.4.2. Per University Senate Rules, students who are absent for more than one fifth of the scheduled classes are expected to withdraw.

Writing Assignments: 30%

- Short writing assignments will be assigned roughly once per week, to be due at the beginning of the first class of the following week.
- Assignments may include written summaries of class discussion, explanations of solutions to problems to be considered outside of class, and other mathematical writing tasks.

Presentation: 10%

- Each student will give a 10 minute presentation, in class, on a topic related to class discussion and/or the writing assignments. Presentations will be scheduled in advance.

Midterm Paper: 15% (5% draft + 10% final version)

- A midterm paper expanding on one of the topics discussed in class will be due on October 17. More details about this project will be provided separately at a later date.
- A first draft will be turned in prior to that date for review; the first draft should be a complete project that will be revised substantially to create the final version.

Final Paper: 25% (5% draft + 20% final version)

- An expository paper about a mathematical topic of your choosing will be due on November 30. More details about this project will be provided separately at a later date.
- As with the midterm paper, a first draft will be turned in prior to that date for review; the first draft should be a complete project that will be revised substantially to create the final version.

I expect the written assignments and the papers to be typed, and not handwritten. Most commonly available word processors, like Microsoft Word, have mechanisms for

writing mathematical equations. Alternatively, you might consider using a TeX or LaTeX editor – this is what most mathematicians use to write mathematical documents. Several common versions, like TeX Live, TeXnicCenter, Kile, and TeXShop are available for free, and a basic primer on using them is available here:

http://www.maths.tcd.ie/ dwilkins/LaTeXPrimer/

Letter grades will be assigned to percentages in the following manner: 80-100% corresponds to an A, 70-79% corresponds to a B, less than 60 -69% corresponds to a C, 50-59% corresponds to a D, and less than 50 % corresponds to an E.

Academic Integrity. It is important to note that students should not plagiarize, cheat, or falsify or misuse academic records. University policy on these offenses is specified in the Code of Student Rights and Responsibilities available through the ombudsperson, and in the Senate rules (Section 6.3). In serious cases, students may be suspended from the University. Don't do these things!

Accommodations: If you have a documented disability that requires academic accommodations, please see me as soon as possible. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center, which coordinates campus disability services available to students with disabilities.

Updates to this document, along with announcements and assignments, will be posted on the course Canvas page.