ABOUT 18.096
PRINCIPLES OF MATHEMATICAL EXPOSITION

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Approved as a 9-unit math CIM, 18.096 provides extensive instruction and practice in the craft of professional writing and lecturing, on advanced mathematics. There are three requirements to pass: (1) to edit and format a ten-page paper for publication in the MIT Undergraduate Journal of Mathematics, (2) to give three fifty-minute lectures, and (3) to write one-page reviews of others' lectures. Requirements (1) and (3) each count 35% of the final grade. A grade of A represents a mastery of mathematical writing and lecturing; of B, good ability; of C, adequate ability; and of D, minimal ability. The journal is intended only for educational purposes at MIT; so publication in the journal does not preclude publication of the same article in any professional journal or book.

Students must come to the first meeting with a draft of a ten-page paper having an adequate amount of technical mathematics, such as a term paper or a research report. These drafts are revised through six or so, two-week cycles of three activities: (1) copy-editing by the instructors, (2) individual conferences with the authors, and (3) editing and rewriting by the authors. This process focuses on three endeavors: (1) elaborating, clarifying, and organizing the contents, (2) writing a proper abstract and nontechnical introduction, and (3) using a professional style and format.

Each first lecture must be on the subject of the student's paper. The second and third lectures may continue the preceding one, or may be on an entirely different subject of the student's choosing. The lectures are normally chalk talks, but may be overhead presentations, or a combination of the two. The lectures should be addressed to a general audience of upper-class MIT math majors. Thus 18.096 also functions as a topics course, covering a spectrum of pure and applied mathematics.

Each review must consist of two parts: (1) a technical summary of the contents of the lecture, and (2) a constructive critique of the delivery. Thus the audience is encouraged to pay close attention to the lecture, and then to reflect on its contents and on its presentation. Moreover, the writing process provides good basic exercise in both technical and nontechnical expository writing. Each review is graded, and returned to its author; also, a copy is made without the author's name for the lecturer, who thereby receives valuable feedback. To maximize the benefit to both reviewer and lecturer, each review is **due** within a week of the lecture; late reviews will be marked down. Only two unexcused absences will be allowed.

In addition, each lecture will be video recorded, and critiqued by trained professional from the Institute's Program in Writing and Humanistic Studies.

All of the writing must be typset using $\mathcal{AMS}$-LaTeX, which most publishers of mathematics now require in submissions. Instruction and help with $\mathcal{AMS}$-LaTeX are provided in class and in conference, especially with the fine points. However, basic familiarity is quickly and easily acquired, and therefore assumed.

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