1077-97-521 **Richard Millman*** (`richard.millman@ceismc.gatech.edu`), 489 RockSprings Rd. NE, Atlanta, GA 30324, and **Daniel Connelly** and **Cher Hendricks**. *The Mathematics of Proofs in Number Theory and Algebra for High Achieving High School Students.* Preliminary report.

The goals of the course are to construct valid proofs (sometimes motivated by examples) and identify the fallacious reasoning of incorrect proofs, learn/revisit some facts from elementary number theory and algebra in more depth and apply them to group theory and other areas of mathematics, to be prepared for higher-level abstract mathematics courses and to see what they might be like, to work individually and in teams to solve mathematical problems, and to development a mathematical habit of the mind. The course was taught to 19 high school students, all of whom have had three semesters of calculus, in a magnet school in a large metro area. The details of the course and the feedback from the students will be presented. (Received September 06, 2011)