With over 20,000 undergraduate students, the Metropolitan State College of Denver is the largest four-year college in the United States. The Department of Mathematical Sciences, with several hundreds majors, is one of the largest departments in the college. Furthermore, the degree program in Mathematics is divided into six concentration areas. As a result, assessing the program and the students in it is a challenging task, and it is different in a principal way from assessment in small or medium sized colleges. We will give an overview of our assessment procedure and our main assessment tools. We will show how our assessment tools are specialized to the specific concentration areas in mathematics, and to illustrate, we will discuss one area in more detail. For each concentration area, a set of knowledge goals and skill goals has been set forth. We devised ways to measure the extent to which each goal has been achieved. In addition, we will mention how a senior project and an advanced problem session are used for assessing our senior students. (Received September 02, 2005)