Abstract: Associated to every knot is a group called its fundamental group. This group is a powerful invariant of the knot and can be studied in a variety of ways. One way is to consider homomorphisms, or representations, of the fundamental group into other groups. The A-polynomial is defined by studying representations of the fundamental group into $SL(2, \mathbb{C})$. In this talk I will define the A-polynomial, describe some of its basic properties, and show how to calculate it for a large class of knots.